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ABSTRACT

A research study examined differences in cooperative education work activities and situations as varied with the students' experience and career maturity. Experience was indicated by the number of prior work placements: occupational maturity was defined in terms of values, future plans and expectations, and scores on an inventory of career maturity. While the investigation involved 2252 undergraduate students from forty-eight four-year colleges and universities, the major portion of the findings was based on 825 students for whom complete data existed. Following discussion of methods and procedures, the report focuses on study results including (1) description of academic characteristics and career expectations of the groups of students: (2) picture of sample as cooperative education student workers, detailing reasons for selecting this form of education and expectations from and problems with it: (3) students' current co-op jobs: (4) description of what students do at work on daily basis and with whom they spend time: (5) students' and supervisors' ratings of their ability and work-related characteristics or traits: and (6) discussion of the co-op student as problem solver. Results suggest that neither amount of prior experience nor degree of career maturity significantly alters the pattern of day-to-day work activities in which cooperative education students engage. Instruments are appended. (YLB)

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IMPACT OF EXPERIENCE AND MATURITY ON THE RESPONSIBILITIES, ATTITUDES, AND CAPABILITIES OF COOPERATIVE EDUCATION STUDENTS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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FOREWORD

This research study is the third of a series examining the work experience of cooperative education students as a function of their sex, curriculum, and traditionality of career choice. The present investigation addressed the question of whether the day-to-day work activities and situations in which cooperative education students engage change, given increased levels of work experience and occupational maturity.

Better understanding of the co-op education work environment for students with differing characteristics is of value to framers of cooperative education programs. Providing practitioners with detailed information of this type should permit more appropriate placements designed specifically to meet the needs of individual students, and a better defined basis for assessing students' experiences. In addition, as a result of the availability of this kind of information, students may be more ably prepared--both before and during a field assignment--for what they can expect and what is expected of them as adult workers.

The overall goal of this project was to describe differences in co-op education work as it varied with the students' experience (as indicated by the number of prior work placements) and career maturity (defined in terms of values, future plans and expectations, and scores on an inventory of career maturity). The detailed questions answered were: 1) do specific work activities and student responsibilities differ in type and degree as a function of experience in co-op and in maturity; 2) do students differing in amount of co-op experience and maturity differ in their attitudes toward co-op and in their confidence, satisfaction, and assessment toward co-op and in their confidence, satisfaction, and assessment of their abilities; and 3) do students varying in experience and maturity differ with respect to how they are treated and rated by supervisors.

Readers are encouraged to communicate their reactions to the Institute, as well as thoughts on related cooperative education matters which may warrant research.

Lee Cohen, Director
Institute for Research and
Development in Occupational
Education

ACKNOWLEDGEMENTS

Again, it is with a sense of pleasure that I approach these acknowledgements: pleasure in completing and reporting our findings, and pleasure in the relationships established throughout the process...

The process started with the award of our grant from the then DHEW, Cooperative Education Branch, Morris Brown, Chief. We are grateful that we had the opportunity to conduct this study, and also that funds for such research are available.

It goes without saying that we could not have even begun this undertaking without the belief that there were a sufficient number of colleges and universities interested enough in our questions to cooperate with us: the participating schools--together with the names of the cooperative education Deans/Directors with whom we worked during 1979-80--are listed in Appendix A. Although the number is too large to acknowledge individually here, they represent only a portion of those sites that would have been interested. It is this interest from the field that makes us want to go on with our research.

So, too, are we appreciative of the many hundreds of students who took time to fill out our questionnaires and who asked their work supervisors to do so. Because of promises protecting their anonymity, we can not mention individual contributions, so it has to be collectively that we offer these two groups of respondents our most sincere thanks.

No such promise of confidentiality prevents me from enumerating with a great deal of pride, the unique input of colleagues and project staff. Alan Gartner, Director of CASE, and Lee Cohen, Director of IRDOE deserve mention for their continued faith in our work. Rita Senf, who contributed especially much to the developmental-conceptual stages, supervised the analyses of data and also gave a generous amount of time to this document. Arlene Vogl, responsible for coordinating project activities on a day-to-day basis, and--with the help of Fred Wheeler--for the computer analyses as well, wrote

preliminary drafts of parts of this report. In between her other duties, Siu Kwan Cheng almost single-handedly keypunched all 10 IBM cards x the 825 subjects, and still found time for doing and helping Seyed M. Reza Eftekharzadeh and Kristine Jones get out the mailings. Ruth Roman-Marrero, typist extraordinaire, assumed most other (primarily fiscal) administrative responsibility when she joined this project, and her determination in this regard is also noteworthy.

Other colleagues--Carol Florio, Victor D'Lugin--stood by this year offering needed encouragement and hope. Harry N. Heinemann, Dean of Cooperative Education at CUNY/LaGuardia Community College and James W. Wilson, Director of the Cooperative Education Research Center at Northeastern University left their role of informal advisor only when I needed devils' advocates. This project benefited from both roles.

Despite the variety in agencies and individuals with whom I dealt on this study and whose contributions I have just barely touched on, as principal investigator I have ultimate responsibility--including, I guess, for typographical errors and for more substantive questions of design and interpretation. Looking back, there were some things that might have better been done differently, but if the findings reported herein spark controversy of any kind, the process that started more than a year ago will have achieved one of the very few important functions that should be expected from any piece of research.

Barbara R. Heller
Project Director

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IMPACT OF EXPERIENCE AND MATURITY ON THE RESPONSIBILITIES, ATTITUDES, AND CAPABILITIES OF COOPERATIVE EDUCATION STUDENTS

INTRODUCTION

This report summarizes the results of a research study conducted in 1979-1980 by the Center for Advanced Study in Education, Institute for Research and Development in Occupational Education (Graduate School and University Center, City University of New York).[1] It is the third in a series of inquiries that seeks to understand how the work experiences of cooperative education students vary with sex, curriculum (or major), and in the present instance, experience and career maturity.

The current investigation was of large scale, involving the participation of 2252 undergraduate students from 48 different four-year colleges and universities. The major portion of the findings is based on reports concerning 825 students for whom we had complete data. Overall, the results suggest that neither the amount of prior experience nor the degree of career maturity significantly alters the pattern of day-to-day work activities in which cooperative education students engage, although these variables relate to other behaviors and perceptions. As a generalization, then, this finding has important implications for the framers of cooperative education programs--especially those programs that offer or require multiple work placements.

Background

The benefits of cooperative education have been lauded since 1906, when it was first introduced to the engineering department at the University of Cincinnati. Since that time, improved academic averages of students participating in cooperative education programs, lower rates of college attrition, greater sense of independence and responsibility, and more relevant and better employment opportunities after graduation are just some of the student-centered gains that have been documented.

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[1]DHEW, Office of Education, Cooperative Education Branch. Project #510 AH 90296.

However, despite the fact that co-op has long been acclaimed as an effective form of education, considering its lengthy history and the present involvement of more than 1,000 American colleges and universities offering some kind of cooperative education program, relatively little is known about its specific successes. It was not until the 1970's (with the availability of Federal funds for research, demonstration, and training) that large constituencies began to pay attention to systematically examining the long- and short-range effects of the cooperative education experience on students and on institutions. A perusal of a recently published review of the research undertaken since 1973 indicates that, of the 24 federally-sponsored research projects for which results are available, at most 12 enhance understanding of the impact--social, academic, and employability--of cooperative education on students and alumni.[1] The remaining half of the completed projects tend to deal primarily with organizational (albeit, important) matters, such as costs of implementing and operating programs, and the optimal role for an institution's cooperative education director.

Cooperative education, as an academic strategy that integrates classroom instruction and the practical application of knowledge in the preparation of college students is, in a real sense, a dual discipline combining experiential and traditional educational theory. To a great extent, however, the co-op experience has been treated as a totality--despite the fact that practitioners, student participants, and the public at large attribute most significance to the work component: in general, more effort goes into arranging the student work experience than into a redesign of the classroom component, or into the integration of schooling and work. Yet, as both the research and programmatic literature can attest, "cooperative education" remains an undifferentiated

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[1] S. J. Brown. Federally Supported Research Into Cooperative Education, Cooperative Education Research Center, Northeastern University, May 1980. Contract No. 300-79-0412. This review describes a total of 34 projects supported with Federal funds from 1973 through 1979. Ten of these are either "in progress" or had not published their findings in time to be included in Brown's summary.

whole. Its different formats, different levels, and different emphases and purposes are frequently overlooked because of the political need to reiterate its collective, positive impact on student-clients and on the community of employers.

Such a view, in our opinion, fosters a disservice to cooperative education as a legitimate, worthwhile, and important endeavor. First, as mentioned, it does not accord with how people actually perceive co-op. Second, it ignores the often creative and complex administrative and organizational structures that have been designed to make co-op programs (in their myriad guises) functional, thereby failing to acknowledge the impact of planned variations. Third, and perhaps most crucial, treating cooperative education globally does not extend our capability to individualize the experience so as to (a) involve and encourage the interest of more institutions, (b) attract more students and cooperating employers, and (c) provide a better match between the participating student and the work placement for the purpose of maximizing learning, growth, and practical experience.

Furthermore, by disregarding the differential effects of the schooling and the work component, neither is well-documented nor understood (much less the differences within each). Thus, there are important gaps in the knowledge base. As a result, after three-quarters of a century of experimenting with this form of education we can claim with some degree of confidence that co-ops have a better chance for employment after graduation than their non-co-op counterparts, and can present some other evidence describing how the career development of the student with co-op experience differs from that of the non-co-op student. We have, however, fewer answers to <u>general</u> questions pertaining to the educational component alone, and would be hard pressed to answer such questions as, "What, if any, are the benefits of counseling-based orientation sessions in improving students' success and satisfaction with their co-op placement?" (or, for that matter, on any other student learning outcome.) There is even less data available to answer questions such as, "What, if any, is the differential impact of alternating vs. parallel work experiences on the after-graduation

employability of (as an illustration) co-op health science majors?" And there is a dearth of evidence that would allow us to weigh the relative advantages and disadvantages of, for instance, placing a second-time cooperative education student twice with the same employing organization; or determining the optimal number of placements to assure continued learning in contrast to, as an example, guaranteed future employment.

It is these latter types of issues that are of specific concern to the present study. Our previous research set out to examine the co-op work component more closely: What kinds of duties do co-ops have? What tasks do they commonly engage in? Do students enjoy and do they feel confident about what they are asked to do? Are they treated (and do they consider themselves) the same as (non-co-op) co-workers with similar job titles? And so on. In addition to furthering understanding of the work component's structure, content, and demands on the student worker, we were also interested in whether the characteristics of the work environment could be influenced by or were responsive to characteristics of the student. In other words, we attempted to ascertain how salient aspects of the work experience co-vary with critical characteristics of the worker.

For the past two years we have been studying the field experiences of co-op students, with particular emphasis on detailing differences in work activities, environments, and perceptions as they relate to the sex of the student[1] and to the match between students' sex and the sex-stereotypedness of occupations.[2] We can now begin to delineate aspects

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[1] B. R. Heller and L. Gross. Sex Differences in Cooperative Education: A Study of Sex Stereotyping as Related to Selected Institutional, Employer, and Cooperative Education Program Characteristics. City University of New York, CASE Report No. 25-78, September 1978. (USOE #510 AH 70042.)

[2] B. R. Heller, L. Gross, and R. Senf. Sex Differences in Cooperative Education: A Study of First-Time Cooperative Education Students in Traditional and Non-Traditional Occupations. City University of New York, CASE Report No. 12-79, November 1979. (USOE #510 AH 80357.)

of the work experience--the kind of duties performed, students' confidence about tasks they are assigned, supervisors' perceptions--and to relate these to a specified set of fixed variables (sex, male/female occupations, and curriculum).

Based on our research of students on their first co-op placement, some selected findings indicate that:

- There were considerable differences between female and male co-op students on their first placement. Thus for example, during a work day males were more mobile than females (i.e., they spent time in more different locations); males were more confident of their ability to perform a greater variety of activities than females; and supervisors (of both sexes) rated females as more able than males to perform more types of tasks.

- Supervisors rated co-op students above average as compared with the typical worker on a series of work tasks, work habits, and adherence to company policy.

- Students on a first co-op assignment were more likely to perform lower-level tasks (e.g., answering phones, lifting or carrying packages or equipment, filing, copying, or checking) rather than higher level ones (e.g., writing reports, designing instruments/techniques/procedures, or analyzing data).

- Women and men students value co-op highly and say they benefit from it greatly, but for different reasons.

- The work environment and working conditions of male and female co-ops differ on many parameters.

- The kind and amount of personal and social interaction that occurs at work are related to sex and curriculum.

- Whether women and men in an extremely sex-stereotyped occupational field differ from one another as groups, in their experiences and perceptions, more or less than they differ from other members of their own sex depends on whether they match the dominant sex in that nontraditional occupation. And,

- The initial co-op placement is crucial in that it establishes and reinforces behavior patterns, preferences, and attitudes toward work, which may persist.

These generalized findings begin to paint a picture of what cooperative education students do on their first work assignment, how they respond to it, and how they are perceived in turn. They suggest that not only is this first adult work experience important but that it varies with the student's sex and major. Taken together with the implied demand for more individualized placements (as witnessed by the increased use of learning contracts), these outcomes led us to question how the work experience changes given repeated exposures.

A secondary (but nontrivial) comparison in a study by Wilson[1] found that seniors perceived greater gains in career development (resulting from co-op) than did freshmen, and that, moreover, the work experience became increasingly important as a change agent to upperclass students. Our own prior research had focused exclusively on the first placement (thus usually but not invariably involving lowerclass students--sophomores); Wilson's findings, coupled with the fact that many co-op institutions allow or even require students to have multiple placements, further defined this present investigation--namely, to document the characteristics of the co-op work experience of students differing in prior work experience and in career maturity.

The Research Problem

The overall question addressed by this 1979-80 study was whether differences in the work tasks and daily patterns of co-op students relate to the amount of their prior experience and to their level of career maturity. Specifically,

- Do work activities and worker responsibilities vary in type or degree as a function of the number of previous co-op placements and/or students' level of maturity;
- Do students differing in experience and maturity differ in their attitudes toward work and in their confidence, satisfaction, and assessment of their abilities; and,

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[1] J. W. Wilson. Impact of Cooperative Education Upon Personal Development and Growth of Values: Final Report to the Braitmayer Foundation. Northeastern University, 1974.

- Do varying degrees of experience and maturity relate to how co-op students are treated and evaluated by supervisors?

The present investigation again focused on the work tasks which co-op students do on a usual basis, and on work-related personal characteristics as perceived by students and their employers. For every measure, we compared students with no prior co-op work experience (i.e., students on their first placement) with those who had at least one--and in some cases as many as six--previous work assignment (s); we also examined groups of students differing in career maturity. In addition, we divided the respondents into a four-way classification that enabled us to contrast high and lower maturity students within two experience groupings: no prior experience and some prior experience. Pictorially, the design partitioned the sample as follows:

1 No Experience, Low Maturity	3 Some Experience, Low Maturity	1+3 Total, Low Maturity
2 No Experience, High Maturity	4 Some Experience, High Maturity	2+4 Total, High Maturity
1+2 Total, No Experience	3+4 Total, Some Experience	1+2+3+4 All Respondents

Groups 1, 2, 3, and 4 are the four basic analytic groups; the five "marginal" groups allow us to compare total maturity and experience levels independently of one another. Thus for each set of items or variables, we can examine the following questions.

- Do students with No (prior co-op work) Experience differ from students with Some (previous) Experience? (1+2 vs. 3+4)
- Do students of Low (levels of career) Maturity differ from students at Higher levels? (1+3 vs. 2+4)
- What, if anything, is the interrelation between Experience and Maturity?

  -Do students at Low (levels of career) Maturity differ from those at Higher (levels of career) Maturity, if both groups have had no prior co-op work Experience? (1 vs. 2)

-Do students at Low (levels of career) Maturity differ from those at Higher Maturity levels, if both groups have had Some prior Experience? (3 vs. 4)

Data is available for, but we did not directly address whether:

-Students with similar, Low (levels of career) Maturity, but with different amounts of prior Experience, differ from one another (1 vs. 3): And, finally, whether

- Students with similar, Higher (levels of career) Maturity, but with different amounts of prior Experience, differ from one another.(2 vs. 4)

As can be readily seen, our two main classification variables are Experience and Maturity. A more complete description and definition of each is given in Methods and Procedures, which follows. We had anticipated once again examining sex and curriculum, and, within the Experience variable, repeated exposure to the same employer. Despite the large number of subjects for whom we obtained data, such finer subdivisions resulted in small and unequal cells that made analysis and interpretation difficult, or in many instances meaningless. For the interested reader, we have included a description of these demographic variables for the four basic analytic groups (1, 2, 3, and 4).

METHODS AND PROCEDURES

This is a cross-sectional study. From among those four-year colleges and universities that offer cooperative education in the sophomore, junior, and/or senior years, we had hoped to involve equal numbers of students on a first co-op work placement and on a third co-op placement in each of three curricular areas (business, engineering, liberal arts) presumed to offer students diversified employment opportunities. A total base sample of 600 students was sought, 200 in each curriculum; each group of 200 would be split between first- and third-time co-op students. Furthermore, to the extent possible, it would be desirable to include equal numbers of females and males. To obtain this ideal sample, we undertook the following procedures.

Identification of Sites

The criteria for identifying institutions from which to draw students were, first, four-year college or university status; second, a stable cooperative education program of substantial size (defined as 100+ students); and third, ones that offered and/or required students to take a co-op work placement more than one time. All other things being equal, preference would be given to institutions with which we had worked effectively in the past.

Sites that met these qualifications were compiled from the Directory of Cooperative Education[1] and from among the colleges that participated in our 1978-1979 study; these were supplemented by other institutions identified last year, but which could not or would not take part in that research. A list of 150 colleges was generated and contacted early in the Fall of 1979. After a series of followup phone calls and correspondence, a total of 60 institutions accepted and agreed to participate. Of these, 48 were judged suitable

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[1] Cooperative Education Association. A Directory of Cooperative Education, Volume V, Drexel University, Philadelphia, PA, 1977.

(e.g., dates of co-op corresponded to our data collection dates) and fulfilled our requests for data. Reasons for the mortality of sites are interesting. From the original list of 150 colleges and universities:

44 did not respond to our initial invitation;

41 declined (generally because they were understaffed, or didn't have a "true" or operational program).

Of the 65 remaining institutions:

5 withdrew (after agreeing initially) because of internal staffing problems, and

8 never supplied the names and/or addresses of student subjects without which we could not proceed.

This left a total of 52. Of these, no student from

1 institution completed any of our instruments, and for

3 institutions, no student completed all three instruments.

These 48 remaining colleges are spread across the U.S., differ with respect to institutional and programmatic characteristics, and vary greatly in total size, in the number of co-op enrollments and co-op offerings, and in the length of the co-op work placement (from two months to one year).[1]

Student Selection

Each of the 48 colleges supplied names and addresses of students on a first co-op placement and students on a final one. Despite our size criteria, some identified as few as 2 students, while the largest had 2326. The average list consisted of 113 students. In each case, we wrote to all students, and since engineering is the largest co-op curriculum, invitations were sent to a disproportionate number of engineering majors (and, hence, a disproportionate number of males).

Our first letter described the study and students' obligations; it included a prepaid return envelope and an Agreement Form which asked

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[1] Appendix A lists the colleges and universities and the cooperative education deans/directors or their representatives with whom we worked. Of the 48 institutions, 34 participated in our previous studies.

for some information about their co-op assignment and history, and whether they would serve as subjects. Depending on when the colleges sent student names and addresses and on the dates of co-op placements, this mailing went out between mid-November 1979 and the end of February 1980, timed to reach students during the first or second week of their winter or spring work period.

We sent the Agreement mailing to at least 5683 students.[1] (Nearly three-fifths of them attended three of the 48 schools in the sample: 2326 students, or 41 percent from one college; 583 students, 10 percent from another; and 341 students, 6 percent from the third site). Approximately 42 percent of those invited, a total of 2378 students, responded before the cut-off date, of whom 2252 agreed to participate. (The reasons given by the 126 students who declined were either that they were "too busy" or "not on co-op.") We judged an additional 49 students unusable because they were already graduated or were not on co-op. The final count was 2203 suitable students.

A total of 1900 of these returned the first instrument, the Student Decision-Making Questionnaire. This represents an 86 percent rate of response based on the final count of suitable, agreeing students, but only 33 percent of the total number of all students contacted. Of the 1900, complete data from all three instruments became available for 825 students by the cut-off dates.[2]

Instruments

In order of administration, the three data collection instruments were the Student Decision-Making Questionnaire, Student Survey, and Supervisor's Evaluation. The Questionnaire and Survey were designed

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[1] In four cases we do not have an accurate count of the number of students who received the mailing, since it was forwarded in bulk to these colleges.

[2] All findings are based on these 825 subjects. From one college we had only one respondent with complete data; at the other extreme, 209 students. The mean number of respondents per school was 17. The three largest colleges supplying about 60 percent of the names accounted for only 44 percent of the sample (25, 11, and 8 percent, respectively) largely due to the disproportionately low rate of return from students from the largest college.

for students; the Evaluation (mailed to students) was to be given to the immediate supervisor at work, completed by that person,and returned directly to us. All instruments were formatted to facilitate easy completion, requiring few or no written-in responses. (See Appendix B)

The Decision-Making Questionnaire, sent to all (2203) students who agreed to take part in the study, is in two parts. Part A concerns the student's current co-op assignment, prior co-op history, academic background, and future career aspirations. Part B, the "Assessment of Career Decision-Making" (ACDM), consists of 40 statements, with each of which the respondent "agrees" or "disagrees." Part B of the ACDM is part of a larger test battery, developed by Vincent A. Harren and used with his permission.[1] Since the ACDM (Part B) was the basis on which the sample was classified into maturity levels, we will discuss it in more detail in the section below entitled, "Experience and Maturity Defined."

The Student Survey (and Supervisor's Evaluation) were mailed (together--and with the scored ACDM) only to students from whom we had received a completed Questionnaire.[2] The 8-page Survey asks in-depth, detailed questions about the students' previous co-op placements (if any), and current work assignment. The major portion of this instrument focuses on the current co-op job, particularly the types of activities in which a student engages, the people with whom the student interacts, and the importance of several characteristics that relate to performing and getting along well at work. There are, in addition, general questions pertaining to the overall co-op experience,

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[1] V. A. Harren. Assessment of Career Decision Making.© Department of Psychology, Southern Illinois University. Undated, to be published.

[2] As each Questionnaire was received, we recorded the ACDM responses, and then returned it to the student along with a "Guide for Interpreting Your ACDM." Also included in this mailing was a copy of the Survey (for the student to complete and return in a postage prepaid envelope) and a copy of the Supervisor's Evaluation (with another prepaid return envelope), which the student was to give to her/his supervisor.

and five questions describing hypothetical work situations; the latter set of items, which ask what a worker "should" do, were designed in anticipation that they would discriminate among degrees of maturity.

The Supervisor's Evaluation contains (in addition to a few miscellaneous questions) two lists--one of work tasks and one of worker qualities. Both correspond to similar lists in the Survey. We asked supervisors to rate how well the student performed the tasks and how much of each quality he/she possessed in comparison with regular (i.e., not co-op) full-time employees in similar jobs.

Each instrument was pre-coded with a unique student identification number; thus neither the names of students nor supervisors appeared on any form. Besides protecting the students' privacy and anonymity, code numbers let us know which of the completed instruments pertained to the same person.

Since each college had its own start and end dates for co-op placements, and since most were of different durations (from 2 to 12 months), we sent out these instruments at staggered intervals from November 13, 1979 to the beginning of July 1980: The Questionnaire was spaced to go out two to three weeks after the Agreement Form; the Survey and Evaluation were timed to arrive two to three weeks before the end of the student's co-op period. A letter from the dean/director of co-op at the student's college and a letter from us accompanied the Agreement Form and the Supervisor's Evaluation.

Experience and Maturity Defined

The focus of this study is on the co-op work experience, although we recognize that most college students have had other jobs--part-time, after school, on vacations--during their high school and post-high school years. We limited the definition of experience to include only co-op work on the assumption that it is different from other work, closely resembling adult work--in terms of degree of supervision, level of responsibilities, remuneration, and intrinsic meaning to the

worker. Furthermore, co-op work, in contrast to baby-sitting and delivering groceries, is almost invariably graded or assessed by important outside others, and is usually related to the student's future career goals.

Experience. After experimenting with several alternatives, we finally defined Experience on the basis of the number of co-op placements. For the total sample of 825, the number of students having 1, 2, ...and up to 6 or more placements is shown in Table 1. Since

TABLE 1

Number and Proportion of Students with One and More than One Co-op Placement

	NUMBER OF CO-OP PLACEMENTS						Total SAMPLE
	1	2	3	4	5	6 or more	
N Ss	436	157	77	32	49	74	825
%	53	19	9	4	6		100%

data analysis and interpretation are greatly simplified by having approximately equal groups, we collapsed the cells and arrived at the following definition of Experience.

No (prior) Experience: This group includes 436 students (53% of the sample) who, at the time of this study, were on their first co-op work assignment.

Some (prior) Experience: Included in this group of 389 (47% of the 825) are students on a second to at least sixth placement. As can be seen in Table 1, 157 of these students (approximately 40% of 389) are, at the time of this study, on their second work assign-

ment; another 19 percent are on a third placement, and 9 percent are on at least their sixth placement.

Our definition of Experience in terms of the number of placements groups together several factors, some of which we inspected to see if they should be separated for analysis. First, we gave each placement equal weight--i.e., counted it once--irrespective of its duration.[1] Second, we did not differentiate between the student who has had, for example, four placements with four different organizations or employers, and the student who has been assigned four different times to the same employer or organization. This was not a significant factor, since the vast majority of students labelled "Some Experience" have worked for at most two different employers. Table 2 below shows the relation between number of placements and number of different employers. Two-

TABLE 2

RELATION BETWEEN NUMBER OF PLACEMENTS AND NUMBER OF DIFFERENT EMPLOYERS: SOME EXPERIENCE GROUP
(Percentages in parentheses)

Number of Placements		Number of Different Employing Organizations							TOTAL N
		1	2	3	4	5	6	7	
2	N	105	51	1	0	0	0	0	157
	(%)	(67)	(32)	(1)	(-)	(-)	(-)	(-)	
3	N	45	15	16	1	0	0	0	77
	(%)	(58)	(20)	(21)	(1)	(-)	(-)	(-)	
4	N	16	6	8	2	0	0	0	32
	(%)	(50)	(19)	(25)	(6)	(-)	(-)	(-)	
5	N	27	11	6	1	4	0	0	49
	(%)	(55)	(23)	(12)	(2)	(8)	(-)	(-)	
6+	N	40	13	9	8	1	1	2	74
	(%)	(54)	(18)	(12)	(11)	(1)	(1)	(3)	
TOTAL	N	233	96	40	12	5	1	2	389
	(%)	(60)	(25)	(10)	(3)	(1)	(-)	(1)	

[1] The median duration of a placement for the sample colleges was 4 months, with a range between 2 (one college) and 12 months (one college). More than half (51%) of the schools had placements of 3 to 5 months.

thirds of the students who were on their second placement worked both times for the same organization; the remaining third worked for two different employers. Interestingly, at least half and as many as 58 percent of the students on a third, fourth, fifth, or sixth (or more) placement co-oped with the same employer each time. Relatively few (no more than about 15%) worked for more than three employers--irrespective of the number of co-op assignments they had had. These data show that, on the average, 60 percent of students who have had multiple work assignments have worked for only one employer, with another 25 percent having been assigned to only two different employers. Thus for most intents and purposes an increased number of placements does not necessarily mean an increased exposure to different organizations, although this is obviously more likely with more placements.

The third factor we examined in defining Experience relates to the students' grade level at the time of their work placements. Table 3 below presents one view of this relationship--and answers the question, does ignoring college year misrepresent experience?

TABLE 3

RELATION BETWEEN NUMBER OF PLACEMENTS AND COLLEGE YEAR: ALL STUDENTS (N=825)
(Figures in Percentages)

NUMBER OF CO-OP PLACEMENTS	YEAR OF COLLEGE					
	1st (N=13)	2nd (N=300)	3rd (N=206)	4th (N=180)	5th (N=113)	6th (N=13)
1	100%	83%	52%	30%	8%	23%
2	--	12	32	20	12	46
3	--	1	7	26	11	--
4	--	1	1	6	15	8
5	--	--	3	12	18	8
6 or more	--	3	5	6	36	15

These data show, as expected, that all college freshmen (N=13) who were on co-op were on a first placement, as were 83 percent of the 300 second-year students. In contrast, about half (52%) of the third-year students were on a first placement, while another 32 percent of them were on a second co-op. Clearly there is a relation between number of placements and grade level. A freshman could not be on a sixth co-op placement; but it is not surprising to find that more than a third (36%) of fifth-year students were.

In an attempt to strengthen the definition of Experience, we tried a more restricted one which considered college year as well as number of placements. We defined a new Experienced group, and included only upperclass students with two or more placements. The new Inexperienced group included freshmen or sophomores on their first co-op.[1] While there were some group differences in selected variables using the new definition, they were of no greater magnitude than those resulting from the more expansive definition. Primarily for that reason, the analyses in the Results section are based on a No Experience group of students on a first placement, and a Some Experience group of students on at least their second placement--irrespective of their college year.

Maturity. Scores on the Assessment of Career Decision-Making (ACDM) were to be the basis for classifying respondents into levels of career maturity. We used the ACDM for several reasons, the more important ones being that it is self-administered and self-scored, takes only a few minutes to complete, and has been used in other

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[1]Selected analyses based on these new groups, totaling 502 students, are described in Appendix C.

studies of cooperative education[1]--a plus because of the possibility of comparing results across studies.

According to its author, the ACDM is a "self-administered... questionnaire...that uses an Agree-Disagree response format. The instrument identifies which stage in a four-stage sequential [planning] process the college student is in regarding decisions about...an occupation.... The ACDM is based on the Tiedeman (et al.) theory of career decision-making...and is designed for use with students enrolled in two or four-year colleges."[2]

Harren describes the decision-making process as consisting of four stages: Exploration, the first stage, is "a period of seeking information about the [occupational] possibilities and a looking inside to understand yourself better." The next stage is called Crystallization, "a period when things are starting to come together.... During this period you are weighing the advantages and disadvantages...and narrowing down the range of [possibilities]. At some point...you move into the third stage, called Choice. During this stage you feel a sense of satisfaction and relief at having made up your mind, and are... pretty confident about your choice.... Then there is a period of waiting before you [take any further action.] This stage is called Clarification in which you are thinking about, or clarifying the consequences of your choice for you, and planning how to carry out your choice.... These four stages make up the Planning Phase of career decision-making.

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[1]D.S. Weinstein, and J.W. Wilson. Cooperative Education Strategies and Student Career Development. Cooperative Education Research Center, Northeastern University, 1978.

[2]Vincent A. Harren. "Assessment of Career Decision-Making: Counselor/Instructor Guide." Mimeo, undated.

Each of the four stages is measured by 10 items. The stage that contains the student's highest raw score (i.e., the largest number of "agree" responses) represents, according to Harren, the stage the student is in at the time of taking the test. This stage reflects "the student's degree of progress through the sequential stages, or how advanced the student is along the continuum of the decision-making process."

For 85 percent of the sample (700 of the 825 students), the highest raw scores were at Stage 3 (Choice), Stage 4 (Clarification), or tied at Stages 3 and 4. Of the remaining 125 students, the largest proportion--103--or 12% of the total had highest scores for Stage 1 (Exploration). The extreme skewness of this distribution meant that we couldn't use stage scores to divide our respondents into meaningful groups of high maturity and low maturity students.[1]

Next we turned to an examination of the raw score distributions of all subjects for each of the four stages in an attempt to find an alternative way of grouping students by maturity, using the ACDM, our only measure. These raw score distributions are presented in Table 4. The most normal (i.e., least skewed) distribution of raw scores is in Stage 4, Clarification. Irrespective of what stage they scored highest in, by dividing the students into two groups (one with Stage 4 scores between 0 and 5, the other with scores from 6 to 10), we arrived

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[1]To understand this distribution, one has only to examine the items at each stage and the proportion of respondents agreeing with each of them. Using Stage 3 as an illustration, the proportion of students agreeing to an item ranged from a low 53 percent to item #15 ("I won't let anything get in the way to my reaching my goal") to 94 percent agreeing that "I think I'll be happy with the career I have chosen" (item #3). Upon reflection, such items appear very simplistic.

As a check, we examined the distribution of all respondents to the ACDM (the 825 + 1109 others for whom we did not have data from all instruments) and found that 891 of the 1109 (80%) also scored highest in Stage 3 and/or 4.

TABLE 4

RAW SCORE DISTRIBUTION OF TOTAL SAMPLE OF STUDENTS ON EACH OF FOUR STAGES OF THE ACDM

RAW SCORE	STAGE SCORE FOR 825 SUBJECT							
	1: Exploration		2: Crystallization		3: Choice		4: Clarification	
	N	%	N	%	N	%	N	%
0	120	15	8	1	5	1	1	0
1	179	22	38	5	7	1	14	2
2	170	20	141	17	19	2	37	4
3	137	17	174	21	26	3	76	9
4	91	11	144	18	35	4	139	17
5	41	5	127	15	44	5	178	22
6	24	3	93	11	74	9	194	23
7	34	4	62	7	101	12	105	13
8	18	2	30	4	149	18	60	7
9	9	1	7	1	193	24	17	2
10	2	--	1	--	172	21	4	1

NOTE: The broken dotted line is slightly above or below 50% of the cumulative percentages.

at two groups of 445 and 380 students, respectively. Other than having groups of similar size (and no alternative measure), there is a rationale for defining Maturity in this way: 85 percent of the sample was at the most advanced stage of maturity, according to the standard way of scoring the ACDM; so, starting with a total sample highly mature in the career decision-making process, for analytic purposes it seemed practical to divide them into two groups, one of which was relatively more mature than the other.

Thus irrespective of their highest stage score, in all following comparisons the High Maturity (Hi M) group is defined as those students with a raw score of 6 to 10 on the Clarification Stage of the ACDM (46% of the sample); the Low Maturity (Lo M) group is composed of students with a relatively lower raw score on the Clarification Stage of the ACDM--a score of 0 to 5 (54% of the sample).

What is the relationship between Maturity (as defined above) and Experience (defined as one (No Experience) vs. two or more (Some Experience) co-op placements)? Looking at Table 5 below, as can be

TABLE 5

REALTION BETWEEN LEVEL OF EXPERIENCE AND DEGREE OF CAREER MATURITY FOR TOTAL SAMPLE

Degree of Career Maturity	Level of Experience	
	Some Experience	No Experience
High	177 (46%)	203 (47%)
Low	212 (54%)	233 (53%)
TOTAL N	389 (100%)	436 (100%)

expected from the way the groups were constructed, within both Experience groups, the proportion of students falling into High and Low Maturity levels is similar; in both instances, slightly less than half the students can be described as being at a (relatively)

higher level of Maturity.[1] There is, moreover, no correlation (r=.03) between Maturity and Experience: Experience and Maturity seem to be unrelated phenomena, and retaining both measures contributes to understanding the data.

Groups for Data Analysis

The four-way classification shown in Table 5 again shows the major analytic groups for this study. We will also present findings for "Maturity Totals," i.e., the sums of Low Maturity (irrespective of Experience) and of High Maturity (irrespective of Experience). In addition, analyses were also done for the No and Some Experience group Totals--collapsing across Maturity. Including these Total groups, results are available for the same groups already shown and discussed in the Statement of the Research Problem, on pages 6 to 8.

Table 6, on the following page, presents some descriptive background information on which to compare these groups. Inspecting the two Experience groups, we note first that the No Experience group, overall, is composed of a greater proportion of female subjects and has more female than male supervisors. This latter tendency is predictable; as we know from previous research, women students are more likely to be in traditionally female fields of study and hence placed in related occupations where women hold supervisory positions.[2]

The second noteworthy point is that the Total No Experience group has a significantly higher grade point average than the group with Some Experience. Again, this may reflect the sex composition (females tend to have higher academic grades than males), as well as the fact that about 60 percent of the No Experience group are in their early (first or second) years of college.

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[1] The χ^2 was not significant.

[2] Heller, Gross, and Senf, op. cit.

TABLE 6

SELECTED DEMOGRAPHIC CHARACTERISTICS
OF ANALYTIC GROUPS

DEMOGRAPHIC VARIABLES	Some Experience			No Experience			Total High Maturity	Total Low Maturity
	High M	Low M	TTL. Some Exp.	High M	Low M	TTL. No Exp.		
Ss Sex: % male	71	72	72	64	66	65	68	69
Sex of Supervisor: % male	83	91	87	80	78	79	82	84
No. of Co-op Placements								
% One	--	--	--	100	100	100	53	52
% Two-6+	100	100	100	--	--	--	47	48
Current Placement								
% Full-time	95	97	96	91	94	92	93	95
Current Year College								
% 1st	--	--	--	3	3	3	2	2
% 2nd	11	15	13	55	59	57	35	38
% 3rd	26	24	25	25	24	25	25	24
% 4th or more	63	61	62	17	14	15	38	36
Mean Grade Point Average	3.6	3.5	3.6	3.8	3.8	3.8*	3.7	3.7
Mean No. of Different Employing Organizations	1.7	1.6	1.6	1.0	1.0	1.0**	1.3	1.3

NOTE: The No Experience group has a statistically significant ($p<.05$) grade point average than the group with Some Experience, and has worked for significantly fewer different organizations ($p<.01$).

With respect to Maturity, there tend to be smaller differences between High and Low Maturity Totals--approximately equal proportions of male subjects, male supervisors, and numbers of different employing organizations. These groups are also quite alike in terms of grade point average and current year of college. Considering Experience and Maturity together, there are a few predictable (not significant) variations among groups.

In summary, the demographic makeup of the groups is such that it reflects the ways they were constituted and accords with differences that prevail in the real world. All subsequent analyses will be presented for these eight groups.

Data Analysis and Interpretation

For the analyses of differences we used *t* tests for means where we had scaled scores, and chi square tests (with appropriate corrections in those instances where the Ns were small) for frequency data. Differences reaching the .05 level of confidence will be considered significant (noted* in the tables), but those reaching the .10 level will also be shown ($^{\Delta}$in the tables). Differences at the .01 level are denoted by a double asterisk (**).

The tables show percentages rounded to whole numbers and means to one decimal place. Students who did not respond to a given item were not included in the calculations. Thus the base of the percentages, and the Ns associated with means, represent students who did respond to the given items; Ns per item are generally not shown in the tables. All the tables in the Results section, following, are set up similarly, with means (or proportions) for each item for each analytic group. Since numeric differences among groups are not shown (to do so adds several more columns to each table, and the subtraction is very easy), significances are handled thusly:

(ITEMS)	STUDENT GROUPS							
	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
		A **, *, or Δ in this column, represents a significant diff. between Hi M/Some Exp & Lo M/Some Exp			A **, *, or Δ in this column equals a signifi-cant diff. between Hi M/No Exp & Lo M/No Exp	A **, *, or Δ in this column equals a signifi-cant diff. between TTL. No Exp & TTL. Some Exp		A **, *, or Δ in this column equals a signifi-cant diff. between Total Low & Total High Maturity

In those few instances where two means appear identical (because of rounding) and a significant difference is indicated, a + or - sign is added. A plus sign means that the High Maturity or Some Experience group had the higher unrounded score; and conversely, a minus sign means that the Low Maturity or No Experience group had the higher score.

A few other comments are relevant to how the data is presented and discussed. Dashes (--) in the tables, connoting zero or no data, may be important even though they do not lend themselves to statistical analyses. They indicate that no student engaged in a particular activity or exhibited a particular behavior. Note also that in discussing the results we may say, for example, that "more of the No Experience group did" such or so. Such a statement invariably means proportionately more of the No Experience group--in other words, for the given item, the percentage of the No Experience group is higher than the percentage of the group with Some Experience.

There are three final points to keep in mind when looking at the results. First, the responses generally represent students' self-reports, and while we have confidence in them, they are not to be mistaken for behaviors observable by others. Second, we are dealing with aggregate data in which, for example, a student on a 3-month placement and one on a 5-month placement are treated equivalently. And finally, because of the nature of the data--particularly the combination of large Ns and the restricted range of change possible using 3- or 4-point scales--statistical differences do not necessarily imply policy significance. Nor do small but statistically significant differences necessarily reflect the usefulness of the information. Thus we can offer only limited interpretations and recommendations. To a great extent, it is the responsibility of those most knowledgeable about their own programs to extract from the data the most meaningful implications and to set the most realistic policies for their own situations.

RESULTS

This section of the report begins with a summary and description of the academic characteristics and career expectations of the groups of students. Then we will present a general picture of the sample as cooperative education student workers, detailing their reasons for selecting this form of education and their expectations from and problems with it. Next, we discuss their current co-op jobs. The largest presentation focuses on what students do at work on a daily basis and with whom they spend time; this is followed by their own and their supervisors' ratings of their ability and work-related characteristics or traits. Finally, through the analysis of five hypothetical questions, we conclude the section with a discussion of the co-op student as problem-solver.

Hereafter, in the text and tables, the following abbreviations will be used in referring to the analytic groups:

Hi M = High Maturity group, or Mature students;

Lo M = Low Maturity group, or Immature students;

No Exp = No Experience group, or Inexperienced students;

Some Exp = Some Experience group, or Experienced students;

Hi M/No Exp vs. Lo M/No Exp = Comparisons of subgroups differing in Maturity within the group with No Experience; and

Hi M/Some Exp vs. Lo M/Some Exp = Comparisons of subgroups differing in Maturity within the group with Some Experience.

The Subjects as College Students

To summarize some of what has appeared in the preceding sections, the total group of respondents represents a highly mature group of college students. More than 8 out of 10 scored at the highest stages of career decision-making, thus making our Hi M and Lo M subdivisions a relative designation.

Similarly, because Experience was defined by number of previous co-op placements, we obtained a No Exp group, all on a first placement, and a Some Exp group, all of whom had had at least one but mostly two co-op work assignments prior to their current one. About 6 out of 10 Some Exp students were in at least their fourth year of college, in contrast to 60 percent of the No Exp group who were lowerclassmen. About one-third each of the Hi and Lo M groups were sophomores, and a similar proportion were in their final undergraduate years. There were somewhat more women in the group with No Exp (35%) than in the group with Some Exp (28%), but the sexes were evenly distributed between Hi and Lo Ms.

Current Majors. Table 7 on the following page shows current majors for all analytic groups.[1] Overall, three-quarters of the Experienced (Some Exp) students were majoring in engineering (58%) and various business curricula (16%). In contrast, fewer of the Inexperienced (No Exp) group were majoring in engineering (46%), with a somewhat greater proportion majoring in the business fields (22%). Changes in future job projections may account for the increased percentage of business majors among the younger (i.e., No Exp) students. With respect to Maturity levels, there was virtually no difference between Hi and Lo M Totals majoring in engineering (51% vs. 52%)--but a sizable difference in business majors, especially when both Maturity and Experience are taken into account: Lo M students in both Experiential groups combined (in contrast with the Hi Ms) have proportionately more business majors, a large disparity from the Some Exp group. Other than our sampling reflecting the historical fact that cooperative education developed, expanded, and became stable in colleges with engineering departments (followed next by

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[1]The sample is composed primarily of engineering and business majors, with about one-third to one-quarter of each analytic group scattered among at least a dozen other curricula.

TABLE 7

PROPORTION OF STUDENTS IN EACH GROUP MAJORING
IN EACH OF THE LISTED CURRICULA
(Figures in Percentages)

MAJORS (CURRICULAR AREAS)	Some Experience			No Experience			High Maturity (N=380)	Low Maturity (N=445)
	High M (N=177)	Low M (N=212)	TOTAL (N=389)	High M (N=203)	Low M (N=233)	TOTAL (N=436)		
Engineering	58	57	58	44	48	46	51	52
Business	11	21	16	19	24	22	15	22
Computer & Info. Sci.	3	7	6	5	5	5	4	6
Health (except nursing)	4	1	2	2	4	3	3	2
Public Affairs (including social work)	4	3	3	3	3	3	3	3
Social Sciences	2	1	1	5	1	3	3	1
Biological Science	2	1	1	4	2	3	3	2
Education	2	1	2	3	1	2	3	1
Agri-Natural Resources	1	1	1	2	2	2	2	2
Psychology	1	1	1	2	3	2	1	2
Communications	1	1	1	2	1	2	2	1
Nursing	3	1	2	2	1	1	2	1
Physical Science	1	1	1	2	2	2	2	2
Archit./Environmental Design	1	2	2	1	--	--	1	1
Fine and Applied Arts	2	--	1	2	1	1	2	1
Mathematics	2	--	1	--	--	1	1	--
Miscellaneous[a]	2	1	1	2	2	2	2	1

[a]Includes Home Economics (N=4), Language (1), Theology (1), Letters (5), undecided (1).

inroads into business departments), this distribution lends some confirmation to the supposition that newer college students are responding to labor market demands for business education majors, with the older ones responding to the earlier demand for engineers.

Change of major may be indicative of either maturity or satisfaction or both. As it was, however, there were no differences among groups; almost one quarter (23%) of All Respondents and of each group reported that they had changed majors since starting college--a figure comparable to last year's finding.[1] Although no differences were significant, proportionately more of the Hi Ms (than Lo Ms) changed major. Like last year, we have reason to conclude that most changes were from one to another specific major within the same general curricular area--e.g., from mechanical to civil engineering.

Educational aspirations. With respect to future educational aspirations (the highest academic degree respondents said they would likely obtain), we might again hypothesize different, perhaps more realistic, reports from the Some Exp and/or Hi M students. Their responses to this question are summarized in Table 8 on the following page. Despite some apparent large differences (at the doctoral level particularly), none reached statistical significance, whether the comparisons were made between Maturity within Experience, between Total Hi and Lo M, or between students with Some and No Exp. Somewhat more than one-third were not planning to continue their education beyond the baccalaureate level, but more than half the students in each group said they planned to get a master's degree. Of the remainder, proportionately more were interested in pursuing a doctorate than a professional degree or special credential.

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[1] Heller, Gross, and Senf, op. cit.

TABLE 8

EDUCATIONAL ASPIRATIONS; PROPORTION OF STUDENTS IN EACH GROUP PLANNING TO ATTAIN ADVANCED DEGREES
(Figures in Percentages)

HIGHEST DEGREE SOUGHT	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
Baccalaureate	36	36	36	34	35	34	35	35
Master's	55	52	53	51	55	52	52	53
Doctorate	6	6	6	13	7	10	10	6
Professional/ Credential	3	6	4	2	3	3	2	5
Undecided	--	--	1	--	--	1	1	1

Scale: 1 = Not very likely, 2 = Somewhat likely, 3 = Very likely

Career plans. When asked about their immediate and future career plans, the students were quite certain that they would enter the career of their first choice, and that 20 years from now they would Very Likely be working full-time at some job or career. In general, as can be seen in Table 9 on the following page, all groups felt less certain that in 20 years they would still be working full-time at their presently chosen career.

The statistically significant differences among the analytic groups all centered on how certain students were about entering their career of first choice: thus as compared with Hi M students, the Lo M group felt more certain ($p<.01$); the Some Exp group was more certain ($p<.05$) than the No Exp group; and within this latter group, those of Lo M were more sure of getting a job in their first-

TABLE 9

STUDENTS' MEAN RATINGS OF THEIR LIKELIHOOD TO ENTER FIRST-CHOICE CAREER, TO WORK AT IT AND/OR ANOTHER CAREER FULL-TIME IN 20 YEARS

LIKELIHOOD OF WORKING	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
Entering first-choice career	2.7	2.7$^{-\Delta}$	2.7	2.5	2.7**	2.6**	2.6	2.7**
F-T at first-choice career in 20 years	2.2	2.3	2.2	2.3	2.2	2.2	2.2	2.2
F-T at any job in 20 years	2.7	2.8	2.7	2.7	2.7	2.7	2.7	2.7

NOTE: ** = Significant at the .01 level; * = Significant at the .05 level; $^{\Delta}$ = Significant at the .10 level.

Scale: 1 = Not very likely, 2 = Somewhat likely, 3 = Very likely

choice career ($p<.05$) than were those of Hi M. It would seem, therefore, that Immature (Lo M) students are generally more optimistic about their immediate career future, and particularly so if they are on their first co-op assignment. This may be related to their greater interest in business-related careers, but whether their optimism is realistic depends on actual future job projections in these fields.

Influences on career choice. What factors were influential in the career choice of the respondents? Using a 3-point scale (1=Little or No Importance to me now; 2=Somewhat Important to me now; 3=Very

Important to me now), students rated each of 15 factors that are purported to influence career decisions. The mean scores of the analytic groups are shown in Table 10 on the following page. The higher the score, the more influential--important--the factor.

Scores ranged between 1.9, slightly less than Somewhat Important (for "prestige"), to 2.9 , Very Important, that the work be "interesting and challenging," "enjoyable," and provide a sense of "achievement and accomplishment." All groups' ratings tend to be very similar (due partly to the restricted range of the scale), although some mean differences reached significance at the .05 level: Hi M students felt "steady, secure" work and "prestigious" work were more important than Lo M students, and this was largely because of differences within the No Exp group. This is the second indication that Maturity may be a significant variable among students who have had No (prior co-op work) Experience.

Interestingly, in other work we have done on career choice, young peoples' desire to "help others," to "contribute to society," and to "work with people" are usually reasons of extreme importance. As can be seen in Table 10, these factors are clearly not especially important to these groups. One possible explanation is that, as we saw previously, the sample contains disproportionate numbers of engineering and business majors--careers which are not stereotypical helping professions. Another hypothesis, however, is that co-op self-selects students more interested in data- and things-related experiences than in people-related ones. Our discussion of their reasons for choosing co-op will further these suppositions, but without a better balanced sample it will remain speculative.

TABLE 10

STUDENTS' MEAN RATINGS OF IMPORTANT INFLUENCES
ON THEIR CHOICE OF CAREER

REASONS: Career offers opportunities for:	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
High Salary	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Pleasant Surroundings	2.7	2.6	2.6	2.7	2.6	2.6	2.7	2.6
Steady Secure work	2.6	2.5	2.6	2.7	2.6	2.6	2.6	2.6+*
Interesting, Challenging	2.9	2.9	2.9	2.9	3.0	2.9	2.9	2.9
Freedom from Supervision	2.1	2.1	2.0	2.1	2.0	2.0	2.1	2.0
Achievement/ Accomplishment	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Prestige	2.0	1.9	1.9	2.0	1.9*	1.9	2.0	1.9*
Enjoyable work	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
To work with people	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
To work with ideas	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
To advance	2.6	2.7	2.7	2.7	2.6	2.7	2.7	2.7
Contribute to Society	2.3	2.3	2.3	2.4	2.3	2.3	2.4	2.3
Creativity	2.6	2.5	2.5	2.6	2.5	2.5	2.6	2.5
Use skills	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8
To help others	2.5	2.4	2.4	2.5	2.5	2.5*	2.5	2.5

NOTE: For interpretation of significances, see Note Table 9.

Scale: 1=Little or No Importance to me now, 2=Somewhat Important to me now, 3=Very Important to me now

The Subjects as Co-op Students

Why do students choose a cooperative form of education, and are there varied reasons underlying the decisions of different students?

Why students choose co-op. Giving respondents a list of 10 possibilities, we asked them to rate the importance of each reason at two points in time--first, when they initially elected a co-op program (or college in which co-op is a mandatory requirement), and second, now. Their responses, presented in Table 11 on the following page, are labelled "Then" and "Now," respectively. In the table, the higher the score, the more important the reason; average scores varied between 1.1 and 2.9.

Let's examine the results first to see if reasons for choosing co-op changed over time, keeping in mind that for the No Exp group relatively little time may have elapsed between their original decision--Then--and Now, early into their first placement. With one exception ("people thought co-op would be good for me"), the Some Exp group gives more importance Now to each of the reasons than they did initially. Since this is also true of the No Exp group, it suggests that participation in a co-op program itself reinforces students' involvement (i.e., provides them with stronger reasons).

In contrast to those with Some Exp, significantly more of the No Exp group chose co-op initially (Then) as a way of gaining "valuable career information," "bettering their understanding of what they want to do," making "important personal contacts," and "getting a more well-rounded education." With respect to Now, there were no significant differences between the two experiential groups. But both groups felt that getting career information, a better understanding of what to do, personal contacts, and a more well-rounded education were somewhat important reasons for choosing co-op Then--and the No Exp group significantly so.

Although the feelings of others tend not be very important to any group of respondents, Then and Now this factor has more importance

TABLE 11

STUDENTS' MEAN RATINGS OF THE IMPORTANCE OF
REASONS FOR CHOOSING CO-OP INITIALLY (THEN) AND NOW

REASONS FOR CHOOSING CO-OP	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
For Tuition Money								
Then	2.2	2.3	2.2	2.2	2.1	2.1*	2.2	2.2
Now	2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.3
To earn extra money								
Then	2.2	2.1$^{\Delta}$	2.1	2.1	2.1	2.1	2.2	2.1$^{\Delta}$
Now	2.4	2.3*	2.3	2.3	2.3	2.3	2.3	2.3
For work experience								
Then	2.7	2.8	2.8	2.8	2.9	2.8$^{-\Delta}$	2.8	2.8$^{-\Delta}$
Now	2.8	2.9	2.8	2.8	2.8	2.8	2.8	2.8
Avoid full time study								
Then	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Now	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0
For career information								
Then	2.5	2.5	2.5	2.6	2.6	2.6**	2.5	2.5
Now	2.5	2.6$^{\Delta}$	2.6	2.6	2.6	2.6	2.5	2.6$^{\Delta}$
Better know what to do								
Then	2.4	2.5	2.4	2.6	2.6	2.6**	2.5	2.5
Now	2.5	2.7$^{\Delta}$	2.6	2.7	2.6	2.6	2.6	2.6
Personal Contacts								
Then	1.7	1.7	1.7	1.9	1.7**	1.8**	1.8	1.7*
Now	2.3	2.1*	2.2	2.2	2.1	2.2	2.3	2.1*
More well-rounded								
Then	2.3	2.4$^{\Delta}$	2.4	2.6	2.5	2.5**	2.4	2.4$^{+\Delta}$
Now	2.5	2.6	2.6	2.7	2.6**	2.6$^{-\Delta}$	2.6	
Others said good for me								
Then	1.5	1.3*	1.4	1.4	1.3*	1.3	1.4	1.3**
Now	1.3	1.2**	1.2	1.3	1.2*	1.3	1.3	1.2**
Make my family happy								
Then	1.2	1.1*	1.2	1.3	1.2*	1.2	1.3	1.1**
Now	1.2	1.1*	1.2	1.3	1.2	1.2	1.3	1.2**

NOTE: For interpretation of significances, see Note Table 9.

Scale: 1=Not very important, 2 = Somewhat important, 3 = Very important

to the Hi Ms than to the Lo Ms, as does the making of personal contacts. As the interested reader can tell from looking at Table 11 in detail, the Experienced Hi Ms rate these factors--Then and Now--as statistically more important than do the comparable Lo Ms.

With respect to financing one's education, co-op was more important ($p<.05$) as an initial reason for choosing co-op for students with Some rather than No Exp.[1] Based on their responses to another similar question, approximately half of each analytic group indicated that without co-op financing one's education would present some problem--again, significantly more so for Experienced students.

Co-op's usefulness. Table 12 on the following page, summarizes students' general views about cooperative education. They were asked to rate co-op's degree of usefulness or helpfulness in accomplishing 20 different objectives. Mean scores are presented, and again, the higher the score the better (more positive) the rating.

Note first that the scores (based on the 3-point scale) tend toward the middle and higher ends--that is, fell between "somewhat" and "very much" useful or helpful. Next note that in every instance where there was a statistically significant difference between the No and Some Exp groups it favored the latter students. Thus proportionately more of the Some Exp group reported that co-op met their expectations, matched the work they wanted to try, clarified their future career plans, provided general work experience, improved general work skills, improved specific career skills, taught them about their strengths and weaknesses, provide contacts for future

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[1] Apparently, deducing from their responses to a question about the type of housing they live in as co-ops, rent was not a factor in finances. About half of each group lived at home on their co-op, with an additional approximately 40 percent of the Hi M and 40 percent of the Some Experience students either sharing living space or living alone. (The figures for the Lo M group and the No Experience group were 38% and 34% respectively.)

TABLE 12

STUDENTS' MEAN RATINGS OF THE USEFULNESS OF CO-OP ASSIGNMENT(S) FOR SPECIFIED PURPOSES

PURPOSES	Some Experience			No Experience			Total High Maturity	Total Low Maturity
	High M	Low M	TTL. Some Exp	High M	Low M	TTL. No Exp		
Feelings of Independence	2.7	2.6$^{\Delta}$	2.7	2.7	2.6	2.6$^{\Delta}$	2.7	2.6*
Met expectations	2.4	2.5$^{\Delta}$	2.4	2.4	2.3	2.4^{+**}	2.4	2.4
Matched wanted work	2.3	2.5**	2.4	2.2	2.2	2.2**	2.2	2.3
Clarified future career plans	2.5	2.6$^{\Delta}$	2.5	2.3	2.4	2.4**	2.4	2.5
Enjoyed co-op experience	2.7	2.8	2.7	2.8	2.7$^{\Delta}$	2.7	2.7	2.7
Relevant to major	2.4	2.6*	2.5	2.5	2.4	2.5	2.5	2.5
Provided general exp.	2.8	2.8	2.8	2.8	2.7	2.7*	2.8	2.8
Improved general skills	2.6	2.7	2.6	2.5	2.4*	2.5**	2.6	2.5
Improved specific skills	2.4	2.5	2.4	2.3	2.2*	2.2**	2.4	2.3
Taught about specific career	2.5	2.6$^{\Delta}$	2.5	2.5	2.5	2.5	2.5	2.5
Taught self strength/ weakness	2.5	2.5	2.5	2.3	2.3	2.3**	2.4	2.4
Contacts for future jobs	2.3	2.3	2.3	2.2	2.1	2.1**	2.2	2.2
Taught about "real world"	2.7	2.6	2.7	2.6	2.6	2.6*	2.6	2.6
Taught how to work with others	2.8	2.8	2.8	2.7	2.6$^{\Delta}$	2.7**	2.7	2.7$^{+\Delta}$
Taught to accept responsibility	2.7	2.6	2.7	2.6	2.5*	2.6*	2.6	2.6^{+**}
Showed how education relates to work	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3
Helped finance education	2.4	2.5	2.4	2.2	2.3	2.3**	2.3	2.4$^{\Delta}$
Helped test career choice	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Taught you about work aspects disliked	2.5	2.4	2.5	2.3	2.4*	2.3**	2.4	2.4
Learned about job in your field	2.3	2.3	2.3	2.1	2.2	2.1$^{\bullet}$	2.2	2.2

NOTE: For interpretation of significances, see Note Table 9.
Scale: 1=Little or not at all, 2=Somewhat, 3=Very much

employment, taught them about the real world, how to work with others, and how to accept responsibility, helped finance their education, taught them about aspects of work they really don't like, and about the kinds of jobs that exist in their field. The interpretation is clear: with more co-op placements, the overall experience becomes richer and fuller. (There were only two significant differences with respect to Maturity Totals--more Hi M than Lo M students reported that co-op encouraged feelings of independence and taught one to accept responsibility.)

Problems with co-op. Do these findings imply that co-op presents few problems? Again the data seem clear. When asked how much of a problem they had in 10 areas since they started co-op, students generally reported "little or no problem." The relatively most severe problems (between "none" and "some") were in keeping up with hobbies and non-school interests and having an adequate social life. Overall, there were very few differences among the analytic groups, but as might be expected, significantly more of the No Exp students (who are less advanced academically) had a problem choosing a major. The Some Exp group had problems maintaining good grades in school and with friendships (See Table 13 on the following page). Interestingly, the severity of the 10 problems was about the same for the Hi M and the Lo M groups.

TABLE 13

STUDENTS' MEAN RATINGS OF THE SEVERITY OF SPECIFIED PROBLEMS

PROBLEMS	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
Complying with college rules	1.2	1.1	1.2	1.1	1.1 -Δ	1.1 Δ	1.1	1.1
Maintaining good grades	1.3	1.3	1.3	1.2	1.2	1.2*	1.3	1.2
Paying tuition & fees	1.4	1.3	1.3	1.4	1.4	1.4	1.4	1.3
Paying other expenses	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Choosing a definite major	1.2	1.1	1.1	1.2	1.3	1.2**	1.2	1.2
Choosing a definite career	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.4
Hobbies & interests	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Relating well to my family	1.3	1.2	1.3	1.2	1.3	1.3	1.3	1.3
Having a good social life	1.5	1.4	1.5	1.6	1.5	1.5	1.5	1.5
Maintaining friendships	1.4	1.4	1.4	1.4	1.4	1.3 Δ	1.4	1.4

NOTE: For interpretation of significances, see Note Table 9.

SCALE: 1=Little or no problem, 2=Some problem, 3=Major problem

The Students' Current Co-op Job

As we saw earlier, the No Exp group were all on their first co-op placement (it was defined this way), while substantially more than half the Some Exp group were on a second or third placement. Also, the No Exp students were working for their first and only co-op employer, while the Some Exp group (even though they may have had as many as 6 or more placements) worked for an average of 1.6 different employing organizations. With these facts in mind, we will now examine students' feelings about and some other characteristics of their present co-op job.

Relation of co-op job to major. Approximately 9 out of 10 students report their current co-op job is related to their college major (significantly more so for the Lo M/No Exp group). Other evidence indirectly substantiates the match between the students' majors and their current co-op jobs. This comes from an examination of the employers' business. Although it is quite true that a student's job could bear little relation to the employer's primary business function (e.g., a student working for a computer company is not necessarily employed in data processing or analysis, but may be employed as a secretary or in a security position), it seems fair to assume that during their placement students will receive some exposure to the organizations' primary business activity. On this assumption, the results in Table 14 (on the following page) support the presence of a relation between the student's major and the employer's business.

The categories students checked to indicate their employer's business[1] are in the left column of Table 14. The results for the

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[1] In describing the type of their employing organization (governmental private, etc.), there were some group differences: 36% of the Hi M group worked for a governmental agency, in contrast with 28% of the Lo M group. There was a smaller difference in the proportion of the Some Exp and No Exp groups whose current employer was a Federal, State, or Municipal agency--29% and 32%, respectively.

TABLE 14

PRIMARY BUSINESS OF EMPLOYING ORGANIZATION: PROPORTION OF STUDENTS IN EACH GROUP CURRENTLY WORKING IN THE LISTED TYPES OF COMPANIES
(Figures in Percentages)

Business of Employing Organization	N (823)	Some Experience (N=389)	No Experience (N=434)	High Maturity (N=380)	Low Maturity (N=443)
Engineering	178	25	19	22	22
Manufacturing	161	21	18	20	19
Utility/Power	75	9	9	9	9
Health/Social Services	72	8	9	11	7
Banking/Finance	69	8	9	7	9
Government, unspec.	53	7	6	5	7
Research/Laboratory	36	4	5	5	3
Computer	35	4	5	4	5
Educational	29	1	6	5	2
Law Enforce/Security	20	3	2	3	2
Advocacy/Public Affairs	20	2	3	1	3
Communications	18	2	2	3	1
Retail Store	14	2	1	--	3
Park/Farm/Agriculture	9	1	1	1	1
Transportation	8	1	1	1	1
Law firm/Legislature	6	--	1	1	1
Cultural	5	1	--	1	1
Food Service	4	--	1	--	1
Architecture	3	1	--	--	1
Market /Survey Research	3	--	1	--	1
Other, misc.	5	--	1	1	1

Experience and Maturity analytic groups are shown in columns that each add to 100 percent. Arranged this way, the table allows us to see whether, for example, students with Some Exp (who we know are predominantly engineering majors) worked in engineering firms or other organizations that employ engineers. Comparing this table and the majors listed in Table 7, we see that a close relationship exists between major and co-op job, since from 46 to 55 percent of the students in all groups worked for engineering, manufacturing, utilities and energy-source processors--the very types of companies most likely to employ engineers. Similarly, business majors, the next largest group of students, were mainly employed by banking and financial institutions and manufacturers. Considering both the students' direct reports and the internal evidence relating major to job, it seems reasonable to assume a close relation, and also to assume that most of the colleges participating in this study use the co-op experience to provide students with hands-on experiences in their chosen career, as legislated, rather than to provide them opportunities for wider career-testing and experimentation.

How co-op jobs are obtained. The findings describing how students got their current co-op job are summarized in Table 15 (on the following page). Overall, three-quarters of the sample were placed by their "college" (interpreted as the co-op division or department). Next highest was "self," meaning they developed or found their own jobs, or in some cases had the job before they started co-op. Small proportions of students got their co-op job as a result of "connections" (friends, relatives), and through on-campus recruiters.

General attitudes toward their current job. About 90 percent of each respondent group said "yes," they would consider working for their present employer on another co-op placement, and most would work there at the same job (about 50%) or preferably at

TABLE 15

HOW CURRENT CO-OP PLACEMENTS WERE OBTAINED: PROPORTION OF STUDENTS IN EACH GROUP INDICATING THE LISTED SOURCE
(Figures in Percentages)

SOURCE OF CO-OP JOB:	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
College	77	75	76	73	78	76	75	77
Self	16	15	16	19	16	17	18	15
"Connections"	2	2	2	1	3	2	1	3
On-Campus Recruiter	3	3	3	3	2	3	3	3
Other	2	5	3	4	1	2	3	2

another job (about 40%). Only approximately 10 percent of the sample was undecided (and then usually because it was too early in the placement). Only a very few said "no," they would not want to work for the same employer again--irrespective of whether it would be at the same or at a different job. There were no significant differences between Maturity levels or Maturity by Experience, but the Experienced students were much more positive about co-oping with the same employer again than were students on their first placement. This result is not surprising, considering that the latter group has no basis for comparison.

In a similar vein, proportionately more of the Some Exp group reported that they had a co-op job they enjoyed well enough to consider as a full-time job after graduation from college: 78% of the Hi M/Some Exp, 69% of the Lo M/Some Exp, 53% of the Hi M/No Exp, and 49% of the Lo M/No Exp students.

What did these groups like about their co-op job(s), considering their best (or only) one?

Irrespective of Maturity or Experience, almost all students liked the way they were treated by their supervisors (overall sample, 95%) and the attitude of their co-workers (91% overall). Most also liked the work they were doing (overall, 85%--with a significant difference between Hi M and Lo M/No Exp students, in favor of the Hi Ms), their organizatcn's policies and regulations (78%), the company's location (77%), and the fringe benefits (74%). Relatively fewer, but still a large proportion of respondents, liked the salaries (69%) and opportunities for advancement (61%).

What Co-ops Do at Work

In our view, one of the most important questions that this study can begin to answer is whether the activities in which co-op students engage vary in relation to their maturity and experiential level. How did our analytic groups spend their time at work? The Survey is the major source of information describing how much of the students' time was usually spent on listed work activities or tasks. These data provide clues to what different groups do, or perceive themselves doing, on a usual basis.

Amount of time usually spent at various work tasks. Respondents were asked to rate, first, how much time was spent on each of 34 tasks, and second how well they performed each task. (We will deal with the latter issue subsequently, comparing supervisors' ratings of the same items.) Students indicated how much of their work time was spent using a 5-point scale, as follows: 1=None, 2=Little, 3=Some, 4=Much, and 5=Almost all of my time. Since the 34 activities they rated (as in our previous studies, still intended to be generic) are similar to those we used before,[1] similar problems emerge: only a portion of the tasks applies to any one job, and this leads to a pile-up of scores of 1 ("None of my time") when we look at group aggregates or

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[1] Heller and Gross; and Heller, Gross, and Senf; op.cit.

means, with ensuing statistical problems. Nevertheless, we calculated means and t tests for the scores from 1 to 5, as well as for the scores from 2 to 5, in an attempt to minimize problems resulting from the skewness of the data. The two sets of averages have different meanings: those based on scores of 1 to 5 reflect the usual amount of time any student spent on an activity; means of scores from 2 to 5 reflect time spent on a task only by those students who engaged in it. The means presented in Table 16 on the following page are based on the 1 to 5 scores--how much time all students usually spend on an activity.

First note that--as expected because of the large number of students whose jobs do not entail a specific task--the range of scores is restricted and lie toward the lower end of the scale. In only one instance do we have a mean of 3.0 ("Some of my time"). Overall, respondents spent most time "filling out forms and keeping records," "collecting/sorting data or things," and "analyzing data," as well as "categorizing data or things," "reading for work," and "writing reports." Least amount of time was spent, generally, in making "security checks," "typing," "dealing with animals or plants," and "dealing with patients." This latter set of items seems more job-specific than the former, and as we know from the students' majors (Table 7) and employing organizations (Table 14), there were no students in law enforcement, secretarial science, agri-natural resources or animal science, or in health services professions jobs.

Next, in comparing the Experience groups, the amount of time spent on the following tasks was significantly greater for students with No Exp than for those with Some Exp: filling out forms and keeping records, filing and copying numbers and checking ($p<.05$); shelving supplies and putting things away, and doing errands including delivering mail ($p<.10$). These differences are easily explained: they all involve low-level tasks, requiring little or no training, and therefore can be--and are being--performed by the Inexperienced worker who, in our sample, is also more likely to be female and on a part-time job (see Table 6).

TABLE 16

MEAN AMOUNT OF WORK TIME STUDENTS IN
ALL GROUPS USUALLY SPEND ON SPECIFIED WORK TASKS

TASKS	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTALS	High M	Low M	TOTALS		
Fill out forms	2.7	2.6	2.6	2.8	2.7	2.7*	2.7	2.6
File	2.1	2.0$^{\Delta}$	2.0	2.1	2.2	2.2*	2.1	2.1
Duplicate	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Stamp	1.6	1.5*	1.6	1.7	1.6	1.6	1.7	1.5**
Proofread	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Lift-heavy	1.7	1.5	1.6	1.6	1.6	1.6	1.7	1.6
Lift-lighter	2.0	1.9	2.0	2.0	2.1	2.0	2.0	2.0
Security checks	1.2	1.2	1.2	1.1	1.2	1.1$^{\Delta}$	1.2	1.2
Shelve supplies	1.6	1.4*	1.5	1.6	1.6	1.6$^{\Delta}$	1.6	1.5
Order supplies	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Keypunch	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5
Collect/sort	2.6	2.8	2.7	2.7	2.7	2.7	2.6	2.8
Analyze data	2.8	3.0$^{\Delta}$	2.9	2.6	2.7	2.6**	2.7	2.8$^{\Delta}$
Categorize data	2.5	2.6	2.6	2.5	2.5	2.5	2.5	2.6
Design Instruments	2.2	2.4$^{\Delta}$	2.3	1.9	1.9	1.9**	2.0	2.2$^{\Delta}$
Type	1.4	1.3	1.4	1.5	1.4	1.4	1.4	1.4
Operate computer	2.0	2.2$^{\Delta}$	2.1	1.9	2.0	2.0	1.9	2.1$^{\Delta}$
Programming	1.8	2.0$^{\Delta}$	1.9	1.5	1.6	1.6**	1.6	1.8*
Operate other equip.	2.2	2.3	2.2	2.2	2.3	2.3	2.2	2.3
Repair equipment	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Do errands	1.7	1.7	1.7	1.7	1.8	1.8$^{\Delta}$	1.7	1.8
Answer phones	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Routine phone calls	2.2	2.1	2.1	2.1	1.9$^{\Delta}$	2.0$^{\Delta}$	2.2	2.0*
Important phone calls	2.0	1.9	2.0	1.8	1.9	1.9	1.9	1.9
Deal w/animals, plants	1.1	1.1	1.1	1.2	1.2	1.1	1.1	1.1
Read	2.5	2.6	2.5	2.5	2.4	2.5	2.5	2.5
Observe meetings	1.9	1.9	1.9	2.0	1.8$^{\Delta}$	1.9	2.0	1.8$^{\Delta}$
Participate in meetings	2.0	2.1	2.1	2.0	1.9$^{\Delta}$	2.0$^{\Delta}$	2.0	2.0
Write form letters	1.8	1.7	1.7	1.8	1.7	1.7	1.8	1.7$^{\Delta}$
Write reports	2.5	2.6	2.5	2.3	2.4	2.3*	2.4	2.5
Instruct people	1.9	2.0**	2.0	1.9	1.7	1.8**	1.9	1.8
Deal w/patients	1.4	1.1	1.2	1.3	1.3	1.3	1.3	1.2*
Deal w/clients	2.1	2.1	2.1	2.3	2.0*	2.2	2.2	2.0
Do art work	1.8	1.7	1.8	1.9	1.8	1.8	1.9	1.8

NOTE: For interpretation of significances, see Note Table 9.
SCALE: 1=None of my time, 2=Little of my time, 3=Some of my time,
4=Much of my time, 5= Almost all of my time

Although making routine phone calls probably also requires little training, this activity tends to be performed by somewhat more of the Some Exp group, as were security checks ($p<.10$). The group with Some Exp also spent significantly more time ($p<.01$) than did the No Exp group at analyzing sets of data, designing instruments/techniques/procedures, computer programming, and instructing or tutoring people--all higher-level activities likely to require more training and background. In addition to these tasks, the Some Exp student spends more time than her/his inexperienced counterpart writing up reports and summaries ($p<.05$), attending meetings as a participant, and in security checks ($p<.10$). Again, these tasks seem to involve more initiative, responsibility, and knowledge--presumed attributes of the experienced worker.

Turning to a comparison of groups differing in Maturity, the Lo M students spent more time than those of Hi M at computer programming ($p<.05$); and analyzing data, designing instruments, and operating a computer terminal or console ($p<.10$). These findings are not in the expected direction in terms of the level of initiative, responsibility, and knowledge these tasks typically entail; we would expect them to be performed more frequently by more mature workers, but they have in common minimal personal interactions: they are data- or things-related, in contrast to people-related, activities and appropriate to business and computer majors. On the other hand, more Hi Ms spent time at tasks one might also label routine: stamping/stapling/pasting ($p<.01$); making routine phone calls ($p<.05$); attending meetings as an observer and notetaker, and writing form letters or other routine things ($p<.10$). Yet two of these latter four activities involve direct interaction with or sensitivity to people. Interestingly, and to the same point, Hi Ms also spent significantly more time dealing with patients--although very few respondents spent any time at this activity.

Focusing on differences within the Some Exp group, this interpretation does not hold up: respondents categorized as Lo M spent more time instructing people ($p<.01$) and, according to their reports, analyzing data, designing instruments, operating a computer terminal,

and programming ($p<.10$). In contrast, Hi M (Some Exp) students file, stamp, and shelve supplies (see Table 16).

When we look within the No Exp group, we see there were no tasks at which Lo M students spend more time than Hi Ms, but the latter group spent more time dealing with clients/customers/patients, at routine phone calls, and in observing and participating in meetings. Phone calls (even routine ones) and attendance at meetings (even in the role of observer/notetaker) involve other people and may, in fact, require fairly advanced skill--at a level that would assuredly characterize Mature people. In addition, Hi M/No Exp group contained the greatest proportion of females, and as we know, many of the tasks enumerated above are sex-linked.

In summary, level of Experience seems more related to differences in time spent on tasks than does degree of Maturity. Experienced workers tend to spend more time on higher-level activities, especially people-oriented ones. Co-op students' maturity, in the absence of experience, also determines how time is spent--with Inexperienced/ Immature students having the most restricted experiences--but in combination with Experience, level of Maturity is even more of an important discriminating factor.

In describing these results (and others), we concentrated on differences among groups in an attempt to illustrate patterns that differentiate the work experience of one group from another in order to clarify the behavior (and hence, needs) of various kinds of students. In doing so, however, we may have inadvertently masked the overriding finding--namely, all groups spend their time similarly. This is clearly apparent in the rank-order correlations between the amount of time the groups spent at the 34 tasks:

High Maturity vs. Low Maturity (Totals), rho= .95
Some Experience vs. No Experience (Totals), rho= .95
Within Some Experience, Hi M vs. Lo M, rho= .96
Within No Experience, Hi M vs. Lo M, rho= .96

These nearly perfect correlations suggest that, notwithstanding differences in the actual amount of time spent on a task, all groups spent time in relatively the same way--most time, for example, analyzing data, and least time dealing with animals and plants.

A serious question arises, then, with the realization that the workday pattern of students on their second (and third, fourth, fifth, and sixth) co-op placement is not substantially different from that of a student on his/her first co-op. (The fact that the same conclusion can be stated about students differing in Maturity seems, to the authors, of less practical concern.) For us, it is especially troublesome considering that the Some Exp group tends to do similar tasks in the same organization again and again, yet cooperative education's primary purpose is to provide an opportunity to practice--in a real-life setting--skills and knowledge learned in the classroom. But as we know, classroom learning is sequentially structured and progressively more difficult. We will elaborate on this in the final summary section of the report.

Usual allocation of time. What about other differences in how students are occupied during a usual day? Table 17, on the following page, presents responses to another Survey question that had respondents indicate the amount of time (from 1=Little or None, to 3=Fairly Much) spent on each of 12 different kinds of activities. With the exception of time spent at one's regular work station and that spent working alone (both between Some and Fairly Much), students devoted relatively little time to the various other listed activities. In decreasing order, the most time went into "working jointly with others," "away from one's regular work station," "at meal or rest breaks," "receiving instruction," "waiting for instruction or for machine time," and "having one's work checked." Virtually Little or No time went to "getting coffee" (either for co-workers or supervisors), or doing "personal" or "school-related" things.

TABLE 17

MEAN AMOUNT OF TIME STUDENTS USUALLY SPEND IN OR AT VARIOUS SITUATIONS

TIME SPENT	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
At your regular work station	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Away from regular work station	1.8	1.7	1.7	1.7	1.8	1.8	1.7	1.8
Receiving instructions	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Having work checked	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Waiting	1.3	1.3	1.3	1.2	1.4**	1.3	1.3	1.4*
Doing personal things	1.2	1.2	1.2	1.1	1.2*	1.2	1.1	1.2$^{\Delta}$
Doing school-related things	1.2	1.1$^{\Delta}$	1.1	1.2	1.2	1.2*	1.2	1.1*
At meals or breaks	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.4
Getting coffee for coworkers	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Getting coffee for supervisors	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Working jointly with others	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0
Working by yourself	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6

NOTE: For interpretation of significances, see Note Table 9.

SCALE: 1=Little or none, 2=Some, 3=Fairly much

Differences between Hi M and Lo M groups were most significant: Lo Ms spent more time "waiting" and less time on "school-related" matters than did the Hi M students, again largely because of variations within the No Experience group. One possible explanation for these particular results might be that Mature Inexperienced students (Hi M/No Exp) are either not actually kept waiting as

long or, alternatively, that by working on school tasks, they are "waiting" more productively than the less mature student who uses this time to conduct other "personal" business.

Another related question asked students to rate the frequency with which their work is reviewed, they are given new assignments, and they discuss their work with a supervisor. There were no differences among any of the analytic groups. The consensus was that they "fairly often" engaged in discussions about their work (2.9 on a scale where 4= Very Often), Fairly Often were assigned new work (2.8), but somewhat less often had their work reviewed (2.5).

General reactions to work assignments. How did the students feel about the tasks they were assigned? On a scale from 1 (Little or No) to 3 (Fairly Much), they rated how frequently the activities they performed could be described by each of the nine qualities listed in Table 18. On the whole, they considered that they spent a goodly amount of time doing things that were worthwhile; Some time on activities that were challenging, instructive, as well as boring or uninteresting; and very Little or No time on activities judged to be inappropriate for their sex, potentially hazardous, unpleasant, beyond their abilities, or at too low a level.

On any one quality, all groups' ratings were very similar, and only a few of the group differences were statistically significant. However, those that were or that approached significance were interesting. Thus within the group with Some Exp, the Lo Ms (in contrast to Hi Ms) felt their jobs were more instructive. Within the No Exp group, Lo M students more often reported that their work activities were at too low a level. This very limited evidence suggests that Maturity may be a factor in worker satisfaction, the direction depending on the workers' prior experience: Experienced workers of lesser maturity (Lo M/Some Exp) tend to be more satisfied than their more mature counterparts, while Immature Inexperienced (Lo M/No Exp) students seem to have more (real or imagined) gripes than the Hi M/No Exp group.

TABLE 18

STUDENTS' GENERAL REACTIONS TO WORK TASK ASSIGNMENTS:
MEAN AMOUNT OF TIME

AMOUNT OF TIME ON TASKS THAT WERE	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
Boring or uninteresting	1.9	1.8	1.9	1.8	1.9$^{\Delta}$	1.8	1.8	1.8
Challenging	2.2	2.3$^{\Delta}$	2.2	2.2	2.2	2.2	2.2	2.2
Instructive	2.1	2.3**	2.2	2.3	2.3	2.3	2.2	2.3
Beyond your abilities	1.2	1.3	1.3	1.2	1.3	1.3	1.2	1.3
Not appropriate to your sex	1.0	1.1$^{\Delta}$	1.0	1.0	1.0	1.0	1.0	1.0
At too low a level	1.6	1.5	1.5	1.4	1.5*	1.5	1.5	1.5
Unpleasant	1.5	1.4	1.4	1.4	1.5	1.4	1.4	1.4
Potentially hazardous	1.2	1.2	1.2	1.3	1.2	1.2$^{-\Delta}$	1.2	1.2
Worthwhile	2.5	2.6$^{\Delta}$	2.5	2.6	2.5	2.5	2.5	2.5

NOTE: For interpretation of significances, see Note Table 9.

SCALE: 1=Little or None, 2=Some, 3=Fairly Much

One final observation: six of these nine qualities were rated last year by students, all of whom fit the current definition of No Experience--that is, were on their first co-op placement.[1] Those students (as compared with the present Inexperienced group) reported spending generally more time on challenging and instructive tasks, as well as on boring or uninteresting activities that were at too low a level. Since the two samples differed in terms of sex distribution

[1] Heller, Gross, and Senf, op. cit.

and major--both of which are related to daily work activities--this probably reflects a real difference in the kinds of work they were assigned.

Work time spent with other workers. Now we wish to examine the types of workers with whom co-op students interact. Given a list of people categorized into ones "in your department," "in other departments," and ones "not employed at your company," students were asked how much work time (Table 19, page 55) and how much non-work time (Table 20, page 59) they usually spend with each.

Work time was rated on a scale from 1=None, to 5=Almost All my time. As we saw for work tasks, average scores can be calculated for all respondents, or only for those who spent some time (i.e., means of scores from 2 to 5) with these kinds of people. Again, results for all respondents yielded a skewed distribution, since many jobs/organizations do not provide access to many types of workers. A comparison of both sets of means showed similar trends, however, so statistical problems notwithstanding, we will limit the discussion to the average time spent by respondents, including those who spent none of their time with any particular category of workers.[1]

Table 19 (on the following page) shows the most and least usual people (i.e., greatest and least amount of time spent) with whom our co-op students interact in a work-related manner. Looking at the means in the whole table, it is apparent that, overall, all groups spend the most work time with others in their own department, followed by people from other departments. Relatively least work time is spent with people not in the employ of their organization.

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[1]Averages based on these scores (means from 1 to 5) are lower and the range is greater--thus significant differences between groups are difficult to interpret behaviorally, but can still be suggestive.

TABLE 19

MEAN AMOUNT OF WORK TIME SPENT WITH
OTHER WORKERS BY STUDENTS IN EACH GROUP

AMOUNT OF TIME SPENT WITH WORKERS	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
In your department:								
Immediate supervisor	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
At or above supervisor's level	2.6	2.4$^{\Delta}$	2.5	2.6	2.4*	2.5	2.6	2.4**
Between your level and supervisors	3.3	3.4	3.4	3.5	3.5	3.5$^{\Delta}$	3.4	3.4
At about your level	3.0	3.1	3.1	3.1	3.3$^{\Delta}$	3.2$^{\Delta}$	3.1	3.2$^{\Delta}$
At a level lower than yours	2.2	2.2	2.2	2.0	2.0	2.0**	2.1	2.1
Co-ops from your college	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Co-ops from other college(s)	1.7	1.5	1.6	1.5	1.7	1.6	1.6	1.6
In other departments:								
With more responsibility than you	2.7	2.6	2.7	2.6	2.6	2.6	2.7	2.6
At about your level	2.4	2.4	2.4	2.4	2.2*	2.3	2.4	2.3$^{\Delta}$
W/less responsibility	2.1	2.0	2.0	1.9	1.8	1.8**	2.0	1.9
All other co-ops	1.7	1.7	1.7	1.7	1.8	1.8	1.7	1.7
Not employed at your company:								
Sales, technical	1.7	1.7	1.7	1.5	1.6$^{\Delta}$	1.6*	1.6	1.7*
Clients, customers, students, patients	2.0	2.0	2.0	2.2	2.1	2.2$^{\Delta}$	2.1	2.0
Other professionals	1.7	1.7	1.7	1.8	1.6	1.7	1.7	1.7
Friends/family members	1.4	1.4	1.4	1.6	1.5	1.5*	1.5	1.4
Delivery or repair people	1.4	1.5	1.5	1.5	1.5	1.5	1.4	1.5

NOTE: For interpretation of significances, see Note Table 9.

SCALE: 1=None of my time, 2=Little of my time, 3=Some of my time, 4=Much of my time, 5=Almost all of my time

Examining experiential levels, both the Some and No Exp groups devoted the most time (between Some and Much) interacting with people with responsibility between their level and that of their supervisors--with No Exp students spending slightly more time ($p<.10$). "Some" work time was spent with people at about their own level of responsibility, and again the No Exp students tended to spend slightly more time with people at this level. A similar amount of time was also spent working with immediate supervisors by both Experience groups. Experienced students, however, were much more likely ($p<.01$) than those with No Exp to spend time with workers in their department who were at a lower level of responsibility--suggesting that they may have had some supervisory relation to these people. Mean amount of work time spent with other co-op students in their own department is low (less than Little time), but this is clearly due to the likelihood that a large number of respondents were the only co-op in the department.

Moving next to workers in other departments, the only statistically significant difference between the experiential groups is in interactions with people with less responsibility than the respondents: students with Some Exp spent more time with these workers, further supporting the hypothesis that Experienced co-ops may have been assigned some supervisory duties.

When it comes to interactions with persons from outside the organization, proportionately more of the Some Exp group spent time with salespeople and technical representatives ($p<.05$), confirming their reported understanding of the organization and its business, but less work time (than did those with No Exp) with friends and family members ($p<.05$), and clients/customers/students/patients ($p<.10$).

Irrespective of amount of prior experience, comparison of the Maturity Totals indicate that Hi M students spent more time with workers in their own department at or above their supervisor's

level ($p<.01$), and somewhat less time than the Lo Ms with workers at a peer level of responsibility. There were almost no differences in the amount of interaction with workers from other departments, but the Lo Ms spent more time ($p<.05$) with salespeople and technical representatives from outside the company than did the Hi Ms. While no ready generalization springs to mind, perhaps these outside representatives were primarily in the computer field, since the Lo M group spent more time working on computers and on equipment-related tasks and were somewhat more likely to be at work all day. We could also propose in explanation that the Hi M group chooses to spend more time with higher-level employees, the more career knowledgeable and more valuable future contacts--or, alternatively, that those workers seek out the more rather than the less mature students.

No important differences exist between Hi Ms and Lo Ms with Some Exp, except for a tendency for the Hi Ms to spend more time with higher-level workers in their own department. Differences were greater within the No Exp Group: Hi M students spend more time with higher-level workers in their own department, and with workers at their own level from other departments ($p<.05$);[1] they spend less time than Lo M/No Exp students with people from their own department at about their own level of responsibility, or with outside workers.

Amount of non-work time devoted to other workers. Students also rated how much time during work they spent socializing, eating, talking, and so on (non-work time) with the same sets of individuals: workers in their department, in other departments, and people not employed at their company. Table 20 shows the average amount of non-

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[1] As a matter of fact, when examining the mean differences only for those respondents who spent some time with the various categories of workers, the Hi M/No Exp group spent even more time with other similar level workers from other departments than did their Lo M/No Exp counterparts ($p<.01$).

work time spent with these persons (based on a 3-point scale where 1= None, 2=Little, and 3=Some of my time). There were very few differences among the analytic groups.

In contrast to the No Exp group, students with Some Exp spent significantly more time socializing with workers with less responsibility--both from within their department and from other departments ($p<.01$), and with friends and family members ($p<.05$). Since they also spent more work time with persons of lesser responsibility, these findings are understandable; that is, at work, people tend to socialize with those with whom they come into frequent contact. Added support for this assumption comes from the tendency of the Lo M group to spend more social time with people at their own level from their own department--the same people with whom they tend to work. Also, note that the overall pattern of social time duplicates that of work time: most time is spent with people within the department, followed by those from other departments, and then outsiders.

Maturity is <u>not</u> a factor in the social interactions of students with Some Experience, nor does it particularly differentiate within the No Exp group, again with the exception that these Lo M students spend more time with similar level workers in their own department than do the corresponding Hi Ms.

Other than the fact that there appears to be some relation between the people with whom one works and those with whom one socializes, patterns of personal interactions do not seem to vary in relation to Experience or Maturity.

In addition to the amount of time spent with other people, the nature of personal interactions is of some interest. We would expect, for example, Mature and/or Experienced students to be more sophisticated (perhaps cynical) in their views, and more worldly in their dealings with others. The <u>Survey</u> contained several pertinent questions in this area.

TABLE 20

MEAN AMOUNT OF NON-WORK TIME SPENT
WITH OTHER WORKERS BY STUDENTS IN EACH GROUP

AMOUNT OF TIME SPENT WITH WORKERS:	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
In your department:								
Immediate supervisor	1.9	1.8	1.8	1.8	1.9	1.8	1.9	1.9
At or above supervisor's level	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Between your level and supervisor's	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
At about your level	2.1	2.2	2.1	2.1	2.2*	2.1	2.1	2.2Δ
At a level lower than yours	1.6	1.7	1.6	1.4	1.5	1.5**	1.5	1.6
Co-ops from your college	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.7
Co-ops from other college(s)	1.5	1.5	1.5	1.4	1.5	1.4	1.4	1.5
In other departments:								
With more responsibility than you	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
At about your level	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
With less responsibility	1.5	1.4	1.5	1.3	1.3	1.3**	1.4	1.4
All other co-ops	1.6	1.6	1.6	1.5	1.6	1.6	1.6	1.6
Not employed at your company:								
Sales, technical	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Clients, customers, students, patients	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Other professionals	1.3	1.2	1.3	1.3	1.2	1.3	1.3	1.2
Friends/family members	2.2	2.2	2.2	2.1	2.1	2.1*	2.1	2.2
Delivery or repair people	1.1	1.2	1.2	1.1	1.2	1.2	1.1	1.2

NOTE: For interpretations of significances, see Note Table 9.

SCALE: 1=None of my time, 2=Little of my time, 3=Some of my time

Getting along with others. We asked students how much of a part they thought personalities play and how much of a part skills and qualifications play in getting along with co-workers and with supervisors, getting promotions or raises, and in gaining respect for oneself. Their mean ratings, based on a scale of 1 (Little or No part) to 3 (Fairly Much), are shown in the following table. (See Table 21). The first noteworthy point is that all analytic groups are alike: they feel that personalities play a much more important

TABLE 21

PART PLAYED BY PERSONALITIES AND SKILLS AND QUALIFICATIONS IN SPECIFIED RELATIONSHIPS: STUDENTS' MEAN RATINGS

IMPORTANCE OF PERSONALITY:	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
Getting along with other workers	2.7	2.7	2.7	2.8	2.7	2.7	2.7	2.7
Getting along with supervisors	2.6	2.6	2.6	2.7	2.6*	2.6	2.7	2.6Δ
Getting promotions or raises	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1
Getting respect for yourself	2.7	2.6	2.6	2.7	2.6*	2.7	2.7	2.6*
IMPORTANCE OF SKILLS AND QUALIFICATIONS IN GETTING								
Along with co-workers	2.3	2.2	2.3	2.2	2.1*	2.1**	2.3	2.1*
Along with supervisors	2.4	2.4	2.4	2.4	2.2**	2.3**	2.4	2.3*
Promotions or raises	2.2	2.3	2.2	2.2	2.1	2.2	2.2	2 2
Respect for yourself	2.6	2.6	2.6	2.6	2.5*	2.5	2.6	2.5

NOTE: For interpretation of significances, see Note Table 9.
SCALE: 1=Little or None, 2=Some, 3=Fairly Much

part than do skills and qualifications in getting along with other people and in getting respect for oneself. Only when it comes to promotions or raises do respondents feel that skills and personality play a fairly equivalent role--and both are relatively less important with respect to this issue than to the other issues listed.

Looking at the part that personalities play, there are no significant differences in ratings between groups differing in Experience, but significant (albeit small) ones between groups differing in Maturity--and especially between Hi Ms and Lo Ms within the No Exp group: Hi Ms feel more strongly than their Lo M counterparts that personality is of more importance in getting along with supervisors and in gaining respect for oneself.

The differences between Hi and Lo Ms with No Exp are even more dramatic with respect to the importance of skills and qualifications. Again, the Mature subjects (Hi Ms) placed significantly greater importance on these factors for three of the four items--the only exception is getting promotions or raises.

If indeed both personality and skills and qualifications do relate to these issues in the real world, the findings suggest again that maturity is a variable of considerable importance in the absence of experience, but diminishes in importance as the worker gains experience.

Co-workers as sources of information. We were also interested in the information exchange between co-ops and their co-workers. We asked students how much information they got from their co-workers in six areas, such as how to obtain special favors. The items and the respondents' mean scores based on a 3-point scale (1=Little or No, 2=Some, 3=Fairly Much information) appear in Table 22 on the following page.

TABLE 22

STUDENTS' MEAN RATINGS OF HOW MUCH INFORMATION OF VARIOUS KINDS THEY GET FROM CO-WORKERS

HOW MUCH INFORMATION GOTTEN ABOUT:	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
How to perform your work	2.1	2.2	2.1	2.3	2.3	2.3**	2.2	2.3
How to get along with others	1.7	1.6*	1.6	1.8	1.6*	1.7	1.8	1.6**
When to take breaks	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.5
Whom to ask for instructions	2.1	2.1	2.1	2.2	2.3	2.3**	2.2	2.2
How to get supplies	2.3	2.2	2.2	2.4	2.3	2.4**	2.3	2.3
How to get special favors	1.6	1.4*	1.5	1.6	1.6	1.6	1.6	1.5

NOTE: For interpretation of significances, see Note Table 9.

SCALE: 1=Little or None, 2=Some, 3=Fairly Much

Looking at the six areas, in general co-ops most frequently ask co-workers "how to get supplies," "how to perform one's work," and "whom to ask for instructions". Co-workers are less often used to ask "when to take breaks," "how to get along with others," and "how to get special favors." As can be seen in Table 22, the significant differences were primarily between co-ops with Some and those with No Exp: thus Inexperienced co-op students more often asked co-workers how to perform work, whom to ask for instructions, and how to get supplies ($p<.01$). If we were to make suppositions, we would expect Inexperienced workers to first, have more questions about such details, and second, to ask the advice of their fellow employees.

Experienced workers (even those whose experience was not gained in the specific organization at which they are now employed) have probably either picked up some of this information before or, alternatively, are more willing to approach other people--e.g., supervisors--for answers.

Two other statistically significant differences suggest a level of sophistication as a consequence of Maturity. Hi M, in contrast to Lo M students (both Experienced and Inexperienced), make use of co-workers for information about interpersonal relations--"how to get along with others" and "how to obtain special favors". Although they ask for relatively little such information (in comparison with other items), apparently they believe that peers are a good source for such "hints" and are comfortable asking them such questions.

Perceptions of how co-ops and co-workers are treated. We asked the students (and also their supervisors) a series of seven true-false questions pertaining to whether they feel co-ops are treated differently from non-co-op workers in similar jobs. Since the questions took the form of statements (e.g., "More work is expected of co-ops than of similar non-co-op workers"), the percentage responding "mostly true" in Table 23 represents the proportion agreeing with the statement. The top half of Table 23 summarizes the students' impressions, while the bottom half shows those of their supervisors.

Looking first at the student-reported data, about half or more students felt yes, it is true that they are given more orientation and fuller explanations, and that more personal interest is taken in them than regular workers. Proportionately fewer of the respondents felt higher level work was expected of them or that they received less instruction. About 15 to 20 percent felt that more work was expected of co-ops, and also that they received more help with non-work problems.

TABLE 23

ARE CO-OP STUDENTS TREATED DIFFERENTLY FROM NON CO-OP WORKERS:
PROPORTION OF STUDENTS AND SUPERVISORS RESPONDING "MOSTLY TRUE" TO 7 STATEMENTS
(Figures in Percentages)

% OF STUDENTS RESPONDING "MOSTLY TRUE"	STUDENTS' VIEWS							
	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
Expect more work	21	19	20	16	14	15Δ	19	16
Expect higher-level work	37	31	34	24	23	24**	30	27
Given less instruction	29	23	26	28	22	25	28	23Δ
Given fuller explanation	45	45	45	52	44	48	48	44
More orientation	65	60	62	65	65	65	65	63
More personal interest	54	50	52	55	43*	48	54	46*
More help with non-work problems	19	16	17	25	19	22	22	18
% OF SUPERVISORS RESPONDING "MOSTLY TRUE"	SUPERVISORS" VIEWS							
Expect more work	13	10	11	12	12	12	12	11
Expect higher-level work	31	27	29	24	28	26	27	28
Given less instruction	17	12	14	11	13	12	14	13
Given fuller explanation	56	57	57	51	57	56	55	57
More orientation	66	66	66	57	66Δ	62	61	66
More personal interest	52	54	53	44	55*	50	55	55
More help with non-work problems	20	25	23	20	23	22	24	24

NOTE: For interpretation of significances, see Note Table 9.

Once again there were few differences among groups, and all were in the direction we would expect. The Some Experience group felt that higher-level work was expected of them ($p<.01$); and the Hi M group felt a more personal interest was taken in them ($p<.05$). We would hypothesize that this reflects actuality: Experienced co-ops are probably capable of working at a level comparable, if not higher, than their non-co-op counterparts; and probably also, lacking experience, a more personal interest is taken in the Mature (Hi M) student who exhibits (at least in comparison with the Inexperienced Lo M student) more potential.

What are employer's impressions? The proportions of supervisors agreeing with the seven statements are presented in the bottom half of Table 23. Generally, proportionately fewer supervisors than students agree that co-ops were treated differently, or that more was expected of them than of regular workers. The exceptions were that more supervisors than students felt that co-ops were given fuller explanations and more help with non-work problems, and that a more personal interest was taken in them. There was only one statistically significant difference in the ratings of supervisors: significantly more supervisors of Lo M/No Exp students (as contrasted with supervisors of Hi M/No Exp students) indicate that they take a more personal interest in co-op workers than in regular workers in similar jobs. This result may relate either to the fact that the largest proportion of women supervisors were in this (i.e., Lo M/No Exp) supervisory group (see Table 6), or this group of students is the most in need of help, or to a combination.

Co-op students report that they comply with company rules and regulations to "about the same extent" as regular workers (or a little better); means for all analytic groups was 2.3 (2=About the Same as regular workers) on the scale. Moreover, all groups indicated that they would get into exactly the same amount of trouble as regular workers for failure to comply with rules and regulations.

Students' Performance at Work

In addition to knowing what work students do, and with whom, equally important to an understanding of the cooperative education work experience is the question of students' performance: how able do they perceive themselves and how are they rated by supervisors? This section of the report presents data about these general issues.

Students' self-ratings of ability. For each of the 34 work tasks listed on the Survey, students were asked not only how much time they spent at them, but also how well they performed or could perform each activity (1=Not very well, 2=Average, and 3=Very well).

A few general observations: with the exception of typing, which all groups report doing less well than Average, the mean scores for the eight groups on the other 33 tasks were high, ranging between 2.0 and 2.7. (See Table 24.) All groups concur that they duplicate, file, fill out forms, stamp, lift light loads, collect/sort data, and categorize data Very Well. They also agree that they are relatively less able to keypunch, do computer programming, repair equipment, and deal with patients--activities that few students do.

As Table 24 shows (see page 67), the group with Some Exp felt significantly more competent than the No Exp group at the following tasks: operating a computer terminal and programming ($p<.01$); and writing reports, analyzing data, categorizing data, and designing instruments ($p<.05$). On the other hand, the No Exp students reported being more able to deal with patients and with clients ($p<.05$), and to lift heavy things, do errands, answer phones, and deal with animals/plants ($p<.10$). The Experienced students feel more competent at the tasks they do more frequently (i.e., those they spend more time at; see Table 16), suggesting--as we found in previous studies--that there is a positive relation between doing a task and a feeling one does it well. This relation, however, doesn't hold up as well for

TABLE 24

STUDENTS' MEAN RATINGS OF HOW WELL THEY PERFORM THE LISTED TASKS

WORK TASKS	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
Fill out forms	2.7	2.6	2.6	2.7	2.6	2.6	2.7	2.6
File	2.6	2.6	2.6	2.7	2.6$^{\Delta}$	2.6	2.6	2.6
Duplicate	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Stamp	2.7	2.6	2.6	2.7	2.6	2.6	2.7	2.6
Proofread	2.5	2.4	2.5	2.4	2.4	2.4	2.5	2.4
Lift-heavy	2.3	2.2	2.2	2.3	2.3	2.3$^{\Delta}$	2.3	2.3
Lift-lighter	2.7	2.6	2.7	2.7	2.7	2.7	2.7	2.7
Security checks	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Shelve supplies	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Order supplies	2.5	2.5	2.5	2.6	2.5	2.5	2.5	2.5
Keypunch	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1
Collect/sort	2.6	2.7*	2.7	2.6	2.6	2.6	2.6	2.7$^{\Delta}$
Analyze data	2.6	2.7**	2.6	2.6	2.5	2.5*	2.6	2.6$^{-\Delta}$
Categorize data	2.6	2.7**	2.7	2.6	2.6	2.6*	2.6	2.7$^{\Delta}$
Design Instruments	2.3	2.3	2.3	2.1	2.2	2.2*	2.2	2.2
Type	1.8	1.6$^{\Delta}$	1.7	1.8	1.7$^{\Delta}$	1.7	1.8	1.6*
Operate Computer	2.2	2.3	2.2	2.0	2.1$^{\Delta}$	2.1**	2.1	2.2*
Programming	2.0	2.1	2.1	1.9	2.0	1.9**	1.9	2.0
Operate other equipment	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3
Repair	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Do errands	2.5	2.5	2.5	2.6	2.6	2.6$^{\Delta}$	2.6	2.6
Answer phones	2.5	2.5	2.5	2.6	2.6	2.6$^{\Delta}$	2.6	2.5
Routine phone calls	2.6	2.5$^{\Delta}$	2.5	2.6	2.5	2.5	2.6	2.5
Important phone calls	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Deal with animals, plants	2.2	2.1	2.2	2.2	2.3	2.2$^{-\Delta}$	2.2	2.2
Read	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Observe meetings	2.4	2.4	2.4	2.5	2.4	2.5	2.5	2.4
Participate in meetings	2.4	2.4	2.4	2.5	2.4	2.5	2.5	2.4
Write form letters	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Write reports	2.5	2.5	2.5	2.4	2.4	2.4*	2.5	2.4
Instruct people	2.5	2.5	2.5	2.4	2.4	2.4	2.5	2.5
Deal with patients	2.0	1.9*	2.0	2.0	2.1	2.1*	2.0	2.0
Deal with clients	2.4	2.4	2.4	2.5	2.5	2.5*	2.5	2.5
Do art work	2.2	2.1*	2.1	2.1	2.1	2.1	2.2	2.1

NOTE: For interpretation of significances, see Note Table 9.

SCALE: 1=Not very well, 2=About average, 3=Very well

the No Exp group. A possible explanation may be inherent in the tasks these groups do and say they do well: those done by the Some Exp group tend to be product-oriented with built-in indicators of success, which makes self-rating easier.

Turning next to a consideration of Maturity, we see first that there are far fewer significant differences between Hi Ms and Lo Ms. Proportionately more Lo Ms report that they operate computer terminals better than Hi Ms, as well as categorize data, and collect/sort it. Hi Ms report no better performance levels than Lo Ms, except when it comes to typing.

The Hi M/Some Exp group, however, does claim to deal with patients and do art work better than the comparable Lo M group ($p<.05$), as well as being more able at typing and making routine phone calls ($p<.10$). But, in contrast, the Lo M/Some Exp students perceive themselves as more able at analyzing data, categorizing data ($p<.01$), and collecting data ($p<.05$)--at all of which they spend more time. There were few meaningful differences in self-ratings of level of performance between the Hi M and Lo M/ No Exp groups, though there is again some suggestion of a relation between time spent on an activity and sense of adequacy in performance.

Supervisors' ratings of student performance. On the Evaluation, we asked supervisors to rate how well the student performed 38 work tasks (34 identical to those on the students' list, plus four additional ones) in relation to the performance of regular, full-time employees in similar jobs. The mean ratings of groups of supervisors, categorized according to the Experience/Maturity level of the co-op student they supervised, are shown in Table 25 on the following page.

How do their ratings compare with those made by the students? Although they are not directly comparable--supervisors' used a 4-point scale (1=Below Average, 2=Average, 3=Above Average, and 4=Excellent)--

TABLE 25

SUPERVISORS' MEAN RATINGS OF HOW WELL STUDENTS
IN EACH GROUP PERFORM THE LISTED TASKS

WORK TASKS	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
Fill out forms	2.9	2.9	2.9	3.0	2.9$^{\Delta}$	2.9	3.0	2.9
File	3.0	3.0	3.0	3.1	2.9*	3.0	3.1	3.0$^{\Delta}$
Duplicate	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Stamp	3.1	3.1	3.1	3.1	2.9$^{\Delta}$	3.0	3.1	3.0$^{\Delta}$
Proofread	2.8	2.9	2.8	3.1	2.8**	2.9	2.9	2.8
Lift-Heavy	2.7	2.7	2.7	2.9	2.8	2.8	2.8	2.7
Lift-Lighter	2.9	3.0	2.9	3.0	2.9	2.9	2.9	2.9
Security checks	2.8	3.2*	3.0	2.9	2.8	2.8	2.8	2.9
Shelve supplies	2.8	2.8	2.8	3.1	2.9$^{\Delta}$	3.0	3.0	2.9
Order supplies	2.8	3.0	2.9	2.9	2.9	2.9	2.9	2.9
Keypunch	2.9	3.3*	3.1	2.8	2.8	2.8*	2.9	3.0
Collect/sort	3.2	3.1	3.1	3.3	3.1*	3.1	3.2	3.1*
Analyze data	3.1	3.1	3.1	3.0	3.0	3.0*	3.1	3.0
Categorize data	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Design Instruments	2.8	2.9	2.8	2.8	2.8	2.8	2.8	2.8
Type	2.6	2.9	2.7	2.8	2.6	2.7	2.7	2.7
Operate computer	3.0	3.3$^{\Delta}$	3.2	3.0	2.9	2.9**	3.0	3.1
Programming	3.0	3.1	3.0	2.8	2.8	2.8*	2.9	3.0
Operate other equipment	3.0	2.9	3.0	2.9	2.9	2.9	2.9	2.9
Repair	2.7	2.9	2.8	2.7	2.6	2.7	2.7	2.7
Do errands	3.2	3.0$^{\Delta}$	3.1	3.1	3.1	3.1	3.1	3.0
Answer phones	3.0	2.9	3.0	3.1	2.9$^{\Delta}$	3.0	3.0	2.9
Routine phone calls	2.9	2.9	2.9	3.1	2.9$^{\Delta}$	3.0	3.0	2.9
Important phone calls	2.8	3.0	2.9	3.1	2.9	3.0	3.0	2.9
Deal with animals, plants	2.4	2.5	2.6	2.8	2.8	2.8	2.6	2.8
Read	3.0	3.0	3.0	3.1	3.0	3.0	3.0	3.0
Observe meetings	2.9	2.9	2.9	2.9	2.8	2.8	2.9	2.8
Participate in meetings	2.7	2.8	2.8	2.8	2.7	2.8	2.8	2.8
Write form letters	2.8	2.7	2.8	3.0	2.8	2.9$^{\Delta}$	2.9	2.8
Write reports	2.9	2.9	2.9	3.0	2.9	3.0	3.0	2.9
Instruct people	2.8	2.8	2.8	3.1	2.8$^{\Delta}$	2.9	2.9	2.8
Deal with patients	3.0	3.2	3.1	3.2	2.9	3.1	3.1	3.0
Deal with clients	3.0	3.0	3.0	3.2	3.1	3.1$^{\Delta}$	3.1	3.0
Do art work	3.0	2.8	2.9	3.0	2.9	2.9	3.0	2.9
Suggest modifications	2.8	2.8	2.8	2.8	2.7	2.8	2.8	2.8
Make decisions	2.9	2.9	2.9	3.0	2.9$^{\Delta}$	2.9	3.0	2.9$^{\Delta}$
Work with others	3.4	3.3	3.3	3.4	3.3$^{\Delta}$	3.3	3.4	3.3*
Work alone	3.3	3.2	3.3	3.4	3.2*	3.3	3.3	3.2$^{\Delta}$

NOTE: For interpretation of significances, see Note Table 9.

SCALE: 1=Below Average, 2=Average, 3=Above Average, 4=Excellent

like the students' ratings, they are generally high. Supervisors' ratings ranged from 2.4 to 3.3, indicating that co-ops performed well better than the average employee on every task. Rated least high, overall, are typing, repairing equipment, and lifting heavy things.

Supervisors of students with Some Exp (in contrast to supervisors of students with No Exp) rated their co-ops better when it came to the following activities: operating computer equipment ($p<.01$); and keypunching, analyzing data, and programming ($p<.05$). Supervisors of No Exp students tended to rate their students better at writing form letters and dealing with clients ($p<.10$).

There were also very few differences when performance scores are examined by Maturity groups: Hi Ms were rated better than Lo Ms by their supervisors with respect to: collecting/sorting data, and working with others ($p<.05$); and filing, stamping, making decisions, and working alone ($p<.10$). There was no instance in which Lo Ms were rated more able than Hi Ms in comparison with the average, regular employee.

When coupled with experience, level of maturity seems to make more of a difference, especially if the student is Inexperienced. Hi M/No Exp students are perceived as better workers (than are the Lo M students) on 12 activities: proofreading ($p<.01$); filing, collecting/sorting data, and working alone ($p<.05$); and filling out forms, stamping, shelving supplies, making routine phone calls, making important phone calls, instructing or tutoring people, making decisions, and working with others ($p<.10$). In startling contrast, Lo M/No Exp students were <u>never</u> rated more able than Hi M/No Exp ones.

There were a few differences within the Some Experience group. Here, Hi Ms were rated <u>better</u>--at doing errands ($p<.10$)--the only one of the four significant differences. Lo Ms were more able at keypunching and security checks ($p<.05$); and at operating a computer terminal or console ($p<.10$).

What do these results mean? They do not appear to relate to students' own ratings of their ability, nor particularly to activities at which they report spending most time. While differences in supervisors' ratings of Experienced and Inexperienced students may reflect the sex composition of the groups of supervisors (87% and 79% male, respectively), or of the students themselves (72% and 65% male, respectively), they are clearly not relevant explanations of the differences within Experience levels--i.e., those between Hi Ms and Lo Ms-- nor is any other variable we've examined. The findings might best be accounted for simply on the basis that Experience contributes to how able one is perceived (or actually performs, for that matter), but lacking experience, Maturity becomes a factor of more importance.

Student and supervisor perceptions about what students know. Table 26 on the following page summarizes supervisors' ratings (bottom half) and the self-ratings of students (top half of the table) to a question about how much the student knows about his/her (i.e., the supervisor's) work and that of others in the organization. The figures are mean scores, based on a scale of 1 (knows Little or Nothing) to 3 (knows Much); thus the higher the score, the more students (report or are judged to) know.

Inspection reveals that students' self-ratings are uniformly higher than those of their supervisors': students report that they know Much about the work of their department/division, what their co-workers do, the overall work the organization engages in, and about how their work contributes to the organizations' aims. They report knowing relatively least about the work of their supervisor. Supervisors generally concur in specifics if not in amount. They rate students least knowledgeable about the work of the supervisor and the work of the organization; students are judged somewhat more knowledgeable about their co-workers' work, that of their department/division, and how their work furthers the company's goals.

TABLE 26

HOW MUCH KNOWLEDGE DO CO-OP STUDENTS
HAVE ABOUT THE WORK OF THEIR ORGANIZATION:
SUPERVISORS' AND STUDENTS' MEAN RATINGS

HOW MUCH CO-OPS KNOW ABOUT:	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
STUDENTS' VIEWS								
Overall work of organization	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Work of department/ division	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Supervisor's work	2.6	2.5	2.6	2.5	2.5	2.5	2.5	2.5
Non-Co-op co-workers' work	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Own contribution to organization's aims	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
SUPERVISORS' VIEWS								
Your work	2.2	2.2	2.2	2.2	2.1**	2.1	2.2	2.1$^{\Delta}$
Students' co-workers' work	2.4	2.4	2.4	2.4	2.3*	2.3	2.4	2.3*
Work of department/ division	2.4	2.3	2.4	2.3	2.2	2.3*	2.3	2.3
Overall work of organization	2.2	2.1$^{\Delta}$	2.2	2.1	2.0	2.0**	2.1	2.1$^{+\Delta}$
Students' contribution to organization's aims	2.4	2.3	2.4	2.4	2.3$^{\Delta}$	2.4	2.4	2.3*

NOTE: For interpretation of significances, see Note Table 9.

SCALE: 1=Little or Nothing, 2=Some, 3=Much

It is of interest that there are no differences among analytic groups in students' self-reports. One would expect differences between Maturity and/or Experience levels, but as noted, all tend to be high. There are, however, differences in how supervisors rated these groups of students. Students with Some Exp were judged by their supervisors to be significantly more knowledgeable about the overall work of the organization and the work of their own division/department than were students with No Experience. Similarly, examining supervisor's ratings of students classified by Maturity, Hi Ms were rated significantly more knowledgeable than Lo Ms. We again see the repetition of a pattern; that is, Maturity is important when there is no prior (co-op) work Experience.

A related question (asked only of students) dealt with their perception about how much their supervisor knows about the details of the student's job, the amount of work the student does, and how much help she/he needs. Over All Respondents, students indicated that supervisors knew most about their job (mean, 2.7; 3=Much), followed by knowledge of the amount of work the student does (mean, 2.6). Supervisors were thought to be least knowledgeable about the help students need (mean, 2.4). There were no statistically significant differences among any of the analytic groups. Comparison of these responses with the ratings presented above suggests that students feel they know more about the organization's work and the work of others than they believe is known about what they do, and especially about what they need. (The "I understand you better than you understand me" plaint of youth?)

Worker Characteristics

An identical list of 50 characteristics, that is, personal qualities or worker traits, was presented to students and to supervisors. Students were instructed to rate each item on the basis of how important it was to the job they presently have (1=Not Very. to 3=Very Important). Supervisors were asked to rate the student

on how much of each characteristic he/she exhibits, as compared with other workers (on a 4-point scale like that used for work tasks).

Characteristics important to students. Table 27 on the following pages shows the students' mean ratings of importance. The first thing to note about Table 27 is the high scores: on only four items were the means below Somewhat Important; most ranged between 2.5 and 2.9. The four items that were less than Somewhat Important were: try to do better than others, comply with unwritten practices, behave like others, and appear hardworking. Also rated relatively low, overall, was getting to know people in other departments. The highest ratings were for accuracy, and for judgment, self-confidence, clear communication, reliability, alertness, and knowing when to ask for help.

Only one of the 50 items was rated as more important to one's job by the Some than by the No Exp group: trying to do better than other workers. This suggests that with Experience comes a greater sensitivity to the competitive nature of finding and keeping a job.

The following characteristics were considered more important by the No Exp group: eagerness to learn new things, compliance with rules, appearance of hard work, reliability ($p<.05$); and loyalty to the job ($p<.10$). We would expect new workers to feel that eagerness, loyalty, and compliance are important traits.

With respect to Maturity, in only one instance did the Lo M group feel a trait was more important than the Hi Ms: knowing when to ask for help. Otherwise, the Hi M group rated the following traits more important: Compliance with rules, behaving like other workers, behaving maturely ($p<.01$); meeting deadlines, finishing tasks speedily, complying with unwritten practices, appearing hard-working, independence, focusing mainly on work, and getting to know people working in other departments ($p<.05$). In addition, Table 27 shows several other traits which the Hi M group tended to feel were more important to their jobs.

TABLE 27

STUDENTS' MEAN RATINGS OF THE IMPORTANCE
OF VARIOUS TRAITS FOR PERFORMING WELL AT WORK

WORK-RELATED TRAITS	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
Accurate	2.9	2.9	2.9	2.9	2.9^{-*}	2.9	2.9	2.9$^{+\Delta}$
Neat	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.4
Intelligence	2.6	2.7$^{\Delta}$	2.7	2.7	2.6	2.6	2.7	2.7
Ambitious	2.4	2.5*	2.4	2.5	2.4	2.4	2.4	2.4
Good judgment	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Adapt to circumstances	2.7	2.7	2.7	2.8	2.7	2.7	2.7	2.7$^{+\Delta}$
Loyalty to job	2.3	2.2	2.3	2.4	2.3	2.3$^{-\Delta}$	2.3	2.3
Assertive	2.3	2.4	2.3	2.4	2.3*	2.3	2.4	2.3
Able to make decisions	2.6	2.6	2.6	2.7	2.6*	2.6	2.7	2.6$^{\Delta}$
Eager to learn new things	2.6	2.7*	2.6	2.7	2.7	2.7*	2.6	2.7
Comply with rules	2.4	2.2$^{\Delta}$	2.3	2.5	2.3**	2.4*	2.4	2.3**
Get along w/other wkrs.	2.5	2.6	2.6	2.6	2.5$^{\Delta}$	2.6	2.6	2.5
Efficient	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Able to work under pres.	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.4
Meeting deadlines	2.5	2.4	2.5	2.5	2.4*	2.5	2.5	2.4*
Willing to admit mistakes	2.5	2.4$^{\Delta}$	2.5	2.5	2.5	2.5	2.5	2.5
Do necessary drudge work	2.4	2.4	2.4	2.4	2.5	2.4	2.4	2.4
Finish tasks speedily	2.3	2.2	2.3	2.3	2.2	2.3	2.3	2.2*
Self-confidence	2.7	2.7	2.7	2.7	2.6	2.6	2.7	2.6
Try to do better than others	1.9	1.7	1.8	1.7	1.7	1.7*	1.8	1.7$^{\Delta}$
Comply with unwritten practices	2.1	1.9*	2.0	2.0	2.0	2.0	2.1	2.0*
Anticipate things to do	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Keep busy	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3
Pitch in	2.4	2.3	2.4	2.4	2.4	2.4	2.4	2.3
Communicate clearly	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Follow instructions exactly	2.5	2.5	2.5	2.6	2.6	2.6	2.5	2.5
Behave like others	1.9	1.8	1.8	1.9	1.7*	1.8	1.9	1.8**
Appear hard-working	2.1	1.9**	2.0	2.1	2.0	2.1*	2.1	2.0*
Take problems in stride	2.6	2.5	2.5	2.6	2.5	2.5	2.6	2.5$^{\Delta}$
Be independent	2.4	2.4	2.4	2.5	2.4*	2.4	2.5	2.4*
Be productive	2.7	2.7	2.7	2.8	2.7	2.7	2.7	2.7
Be reliable	2.8	2.8	2.8	2.9	2.9	2.9*	2.9	2.9
Be alert	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.8
Do work of high quality	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Show initiative	2.6	2.7	2.7	2.7	2.6	2.7	2.7	2.7

(continued)

TABLE 27
(continued)

STUDENTS' MEAN RATINGS OF THE IMPORTANCE
OF VARIOUS TRAITS FOR PERFORMING WELL AT WORK

WORK-RELATED TRAITS	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
Know when to ask help	2.7	2.8	2.7	2.7	2.8	2.7	2.7	2.8$^{\Delta}$
Know whom to ask help	2.6	2.6	2.6	2.7	2.6	2.7	2.6	2.6
Tolerate other's views	2.4	2.2*	2.3	2.3	2.3	2.3	2.3	2.3$^{-\Delta}$
Accept criticism	2.6	2.5	2.6	2.5	2.5	2.5	2.6	2.5
Not get rattled	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Take responsibility	2.7	2.7	2.7	2.7	2.8	2.7	2.7	2.7
Focus mainly on work	2.5	2.4	2.4	2.5	2.4*	2.4	2.5	2.4*
Behave maturely	2.7	2.6**	2.6	2.7	2.6	2.6	2.7	2.6**
Be friendly with coworkers	2.6	2.6	2.6	2.6	2.5	2.6	2.6	2.5
Be friendly with supervisors	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Be a good sport	2.3	2.3	2.3	2.4	2.3*	2.4	2.4	2.3
Volunteer to do things	2.2	2.1	2.1	2.2	2.1	2.2	2.2	2.1$^{\Delta}$
Be organized	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Be a good team member	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Get to know people in other departments	2.1	2.1	2.1	2.2	2.0**	2.1	2.1	2.0*

NOTE: For interpretation of significances, see Note Table 9.

SCALE: 1=Not Very Important, 2=Somewhat Important, 3=Very Important

Next we can compare the ratings of Experienced Hi Ms and Lo Ms. Here again we see that the Hi Ms tended to rate more traits more important, and six reached or approached significance. The Lo Ms felt that ambition, intelligence, and eagerness to learn new things were significantly more important.

Similar but more dramatic trends characterize the comparison of Inexperienced Hi Ms and Lo Ms. On 11 traits these groups differed significantly, and in each case the trait was rated more important by the Hi M group. Thus Hi Ms thought it more important to behave like other workers, get along with other workers, be a good sport, and get to know people in other departments. They also rated complying with rules and policies higher, as well as being independent, being able to make decisions, accuracy, and being assertive. Meeting deadlines and focusing mainly on work were of importance as well.

In summary, if a worker is Inexperienced, she/he is more likely to believe that many more traits are important to a job; similarly, Mature workers--irrespective of level of Experience--rate many more traits as important, in contrast to their Immature counterparts. Included among the traits considered important by Mature and by Inexperienced students are: ambition, including eagerness to learn; conformity (both with written and unwritten rules) and behavior; and appearances.[1] In addition, however, they also recognize the importance of reliability and meeting deadlines.

In the section following, we will compare these opinions with supervisors' perceptions of how much of these traits these respondents exhibit.

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[1]That "appearances" are more important to the more rather than the less Mature worker receives support by the responses to a Survey question that asked about perceptions of an employee based on the way he/she dresses. While there were no differences between Experience groups, Hi M students feel significantly more strongly than Lo M students that the way an employee dresses does affect how she/he is perceived.

Supervisors' views of students' traits. Table 28 shows the mean scores of the co-op students' supervisors to a question asking how much of each trait the student exhibits in comparison with the regular full-time employee. Notice first that the scores are uniformly high, varying between 3.0 (Above Average) to 3.5 (between Above Average and Excellent on the 4-point scale)--except for assertiveness, decision-making ability, trying to do better than other workers, compliance with unwritten practices, anticipating what to do, and knowing people in other departments. On all 44 remaining characteristics, co-op students are rated Above Average in relation to other workers. Overall, they are rated most highly for their ability to get along with others and for their eagerness to learn--in other words, co-op students try harder.

When we examined students' ratings, we saw only a few significant differences between those with Some and those with No Experience, favoring the latter group. As can be seen in Table 28, this was also the case for their respective supervisors. There is only one difference approaching statistical significance, and that concerns tolerance for the views of others; supervisors of No Exp students feel these students tend to be more tolerant of others' views.

What about Maturity? Inspection of the scores of supervisors of Hi M and Lo M students reveals many significant differences. All 30 differences favor the Hi M group! To mention only a few (all with $p<.01$), Hi M students were rated by their supervisors as exhibiting the following characteristics proportionately more than Lo M students: eager to learn, able to communicate clearly, follows instructions exactly, knows when to ask for help, knows whom to ask for help, and is organized.

Similarly, the few differences between Hi Ms and Lo Ms with Some Exp also favor the Hi Ms. (see Table 28). But the esteem in which Hi M co-op students are held is nowhere more apparent and dramatic than in the comparisons between Inexperienced Hi Ms and

Lo Ms. Here again, supervisors' ratings were significantly different, or approached significance, for 24 traits, on all of which the Hi Ms were more highly valued.

We will leave more detailed examination of Tables 27 and 28 to those readers who are especially interested. One point seems important to bear in mind when reviewing the specific traits that differentiate the analytic groups: the sex distribution of respondents, both supervisors and students, is, as already noted, disproportionate; male students and supervisors predominate in the Some Exp group, and in the Hi M and Lo M subgroups. There is virtually no difference, however, in the proportion of males in the Hi M and Lo M Totals (collapsing levels of Experience), where most of the significances occur. As we know from our previous research, inadvertent sex stereotyping can be particularly powerful when people are asked to react to personal characteristics and/or worker qualities. In this case, the major effects of sex stereotyping should show up most plainly in the Some vs. No Exp comparisons, but these groups, as we have seen, generally did not differ significantly.

What do these findings mean alone and in conjunction with students' own perceptions of worker-trait importance? First, they provide another clear instance of the importance of Maturity in a worker--which, on these sets of items, is of more weight than Experience. But again, Maturity level assumes an even greater role in the absence of work Experience.

Second, the results show a fair, but by no means perfect, agreement between those characteristics students perceive as important to a job and the characteristics supervisors rate them as exhibiting strongly. The agreement is better for the Maturity groups than for the Experience ones--suggesting that in certain ways maturity is independent of actual experience, and that relatively Mature co-op students have a better grasp of some of the demands of the real world. In other words, in contrast to

TABLE 28

SUPERVISORS' MEAN RATINGS OF THE AMOUNT OF WORK-RELATED TRAITS STUDENTS EXHIBIT, COMPARED WITH NON-CO-OP WORKERS

WORK-RELATED TRAITS	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
Accurate	3.1	3.1	3.1	3.2	3.0**	3.1	3.2	3.0Δ
Neat	3.1	3.1	3.1	3.2	3.1	3.1	3.1	3.1
Intelligence	3.4	3.3	3.3	3.4	3.3	3.3	3.4	3.3
Ambitious	3.3	3.2	3.2	3.3	3.2	3.2	3.3	3.2
Good judgment	3.1	3.1	3.1	3.2	3.0*	3.1	3.2	3.1*
Adapt to circumstances	3.2	3.1	3.1	3.2	3.1*	3.1	3.2	3.1*
Loyalty to job	3.2	3.1	3.1	3.2	3.1*	3.1	3.2	3.1*
Assertive	2.8	2.8	2.8	2.8	2.7	2.8	2.8	2.7
Able to make decisions	2.9	2.9	2.9	3.0	2.8*	2.9	2.9	2.8*
Eager to learn new things	3.5	3.3*	3.4	3.5	3.4	3.4	3.5	3.4**
Comply with rules	3.3	3.1	3.2	3.3	3.2	3.2	3.3	3.2*
Get along with other workers	3.5	3.4	3.4	3.5	3.4	3.4	3.5	3.4Δ
Efficient	3.2	3.1	3.1	3.3	3.1*	3.2	3.2	3.1*
Able to work under pressure	3.1	3.0	3.0	3.1	2.9*	3.0	3.1	3.0*
Meeting deadlines	3.0	3.0	3.0	3.1	3.0Δ	3.0	3.1	3.0Δ
Willing to admit mistakes	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Do necessary drudge work	3.0	3.0	3.0	3.2	3.1	3.1	3.1	3.0
Finish tasks speedily	3.0	3.0	3.0	3.2	3.0*	3.1	3.1	3.0
Self-confidence	2.9	3.0	3.0	3.1	3.0	3.0	3.0	3.0
Try to do better than others	2.8	2.8	2.8	2.9	2.8	2.8	2.8	2.8
Comply with unwritten practices	2.8	2.9	2.9	3.0	2.8*	2.9	2.9	2.8
Anticipate things to do	2.9	2.8	2.8	2.9	2.7*	2.8	2.9	2.8*
Keep busy	3.1	3.0	3.0	3.1	2.9*	3.0	3.1	3.0*
Pitch in	3.2	3.2	3.2	3.3	3.2Δ	3.2	3.3	3.2*
Communicate clearly	3.0	2.9	3.0	3.1	2.9**	3.0	3.1	3.0**
Follow instructions exactly	3.1	2.9	3.0	3.1	2.9*	3.0	3.1	3.0**
Behave like others	2.9	2.8	2.9	3.0	2.9Δ	2.9	2.9	2.8Δ
Appear hard-working	3.1	3.0	3.0	3.1	3.0	3.1	3.1	3.0
Take problems in stride	3.0	3.0	3.0	3.1	3.0Δ	3.0	3.1	3.0Δ
Be independent	3.0	3.0	3.0	3.1	3.0	3.0	3.1	3.0
Be productive	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2

(continued)

TABLE 28
(continued)

SUPERVISORS' MEAN RATINGS OF THE AMOUNT OF WORK-RELATED TRAITS STUDENTS EXHIBIT, COMPARED WITH NON-CO-OP WORKERS

WORK-RELATED TRAITS	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
Be reliable	3.4	3.3	3.3	3.4	3.3*	3.3	3.4	3.3*
Be alert	3.3	3.2	3.2	3.3	3.2	3.2	3.3	3.2
Do work of high quality	3.3	3.1*	3.2	3.2	3.1	3.2	3.2	3.1*
Show initiative	3.2	3.1	3.1	3.2	3.0$^{\Delta}$	3.1	3.2	3.1*
Know when to ask help	3.1	3.0	3.1	3.3	3.0**	3.1	3.2	3.0**
Know whom to ask help	3.1	3.0	3.0	3.2	3.0**	3.1	3.2	3.0**
Tolerate other's views	3.0	2.9	3.0	3.1	3.0$^{\Delta}$	3.1$^{\Delta}$	3.1	3.0
Accept criticism	3.1	3.0	3.0	3.1	3.1	3.1	3.1	3.0
Not get rattled	2.9	2.9	2.9	3.0	3.0	3.0	3.0	2.9
Take responsibility	3.2	3.0$^{\Delta}$	3.1	3.2	3.1	3.1	3.2	3.0$^{*\Delta}$
Focus mainly on work	3.0	3.0	3.0	3.1	3.0*	3.0	3.1	3.0$^{\Delta}$
Behave maturely	3.1	3.1	3.1	3.2	3.1	3.1	3.2	3.1$^{\Delta}$
Be friendly with coworkers	3.4	3.3	3.3	3.4	3.3	3.3	3.4	3.3
Be friendly with supervisors	3.3	3.2	3.3	3.3	3.3	3.3	3.3	3.2
Be a good sport	3.3	3.1$^{\Delta}$	3.2	3.2	3.2	3.2	3.2	3.2$^{+\Delta}$
Volunteer to do things	3.1	3.0$^{\Delta}$	3.0	3.1	3.1	3.1	3.1	3.0*
Be organized	3.1	2.9	3.0	3.2	3.0**	3.1	3.1	3.0**
Be a good team member	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Get to know people in other departments	2.8	2.8	2.8	2.8	2.7	2.8	2.8	2.7$^{\Delta}$

NOTE: For interpretation of significances, see Note Table 9.

SCALE: 1=Below Average, 2=Average, 3=Above Average, 4=Excellent

showing high levels of performance, student understanding of the importance of or possession of certain personal traits may result from maturation and not experience. (We will return to an examination of this hypothesis in the following section of the results.)

Perhaps most importantly, these results emphasize the fact that co-op students, even beginning ones, are fairly sophisticated about the work world and are held in high esteem by their employers. With regard to both their ability to perform most tasks and their work-related traits, supervisors find co-ops "above average or better" than the regular full-time employee in similar jobs.

Before turning to the final section, we would like to examine, in more detail, one additional worker trait: punctuality. When asked about punctuality, there were no differences among the reports of groups of student respondents; all arrived at work on time or even from five to ten minutes early. Similarly, no differences among groups were apparent with respect to when they left work for the day. Co-op students more frequently reported staying late--leaving work between five to 10 and 15 to 30 minutes after their day officially ended.

Students were asked two additional questions, one relating to what they do between the time they usually arrive at work and the start of the official day, and the second concerning the nature of their activities between the end of the official day and the time they usually leave the work site. Their responses, coded into "work-related" (e.g., start work, finish left-over work) and "non-work related" categories (e.g., have coffee, read the paper, do personal business, tidy myself up), are presented in Table 29 on the following page. Since most respondents report arriving just about on time, there is little opportunity for them to engage in any preliminary activity. Generally, however, slightly more than half of each analytic group started working when they arrived early.

TABLE 29

PROPORTION OF STUDENTS WHO ENGAGE IN WORK- OR NON-WORK-RELATED ACTIVITIES BEFORE AND AFTER OFFICIAL WORKING HOURS
(Figures in Percentages)

% OF STUDENTS ENGAGED IN:	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
(Before Day Starts:)								
work-related activity	47	53	50	59	53	56	54	53
non-work related activity	53	47	50	41	47	44	46	47
(After Day Ends:)								
work-related activity	80	78	79	74	72	73	76	75
non-work related activity	20	22	21	26	28	27	24	25

Proportionately (although not significantly) more of the students on their first co-op job (No Exp) say they begin working immediately, and within this group, dramatically more of the Hi than the Lo M students say so.

The circumstances are different with respect to what students say they do when they stay late. As we noted above, our sample indicates that they leave work, on the average, about 15 minutes after the day's official end. During this interval, about three-quarters remain to complete work-related tasks. Thus among these groups of respondents, coming to work early may or may not be to get a "head start" on the day, but apparently most remain to "clean up" the day's business.

Problem-Solving at Work

The Survey contained five hypothetical situations that we feel simulate common types of dilemmas people face at work. To each

situation, several "solutions" were presented, and students were asked to select the one best one ("what should be done"), or to offer an alternative. Since we did not attempt to predetermine a correct answer (by, for example, asking employers to judge the most effective or viable option), the responses of the analytic groups merely represent different problem-solving styles; these may, however, relate to the study's major variables.

Before turning to the results of the hypothetical questions (Table 30 on the following page), some summary seems in order. Scattered throughout the results are bits and pieces of data that are relevant to the respondents' general sophistication. First, co-op students spend a considerable amount of time working by themselves, without a great deal of supervisory review. They also spend a substantial amount of time interacting with their supervisor about work-related and non-work matters. The students have some sense of the role that personality plays, as well as that of skills and qualifications, in personal interactions, and for the most part ask appropriate questions of co-workers. While they feel they have a great understanding of their work and that of their department and organization, they also indicate that their supervisors do not know the details of their (i.e., the students') jobs. They know they are treated somewhat specially because of their co-op status, and often agree with their supervisors as to how. In addition, they feel--as do their supervisors--that they perform better than the typical regular employee, and they seem to have an understanding of the behaviors that employers expect. How then do these attributes translate into action?

The first simulated problem set up a situation where a worker was given an important task to complete by the supervisor and, because of time restraints, couldn't finish it that day. The respondent was asked what should be done, assuming the supervisor had already left. As can be seen in Table 30, the majority in each

TABLE 30

SOLUTIONS TO HYPOTHETICAL QUESTIONS:
PROPORTION[a] OF STUDENTS CHOOSING EACH SOLUTION
(Figures in Percentages[a])

HYPOTHETICAL QUESTIONS	Some Experience			No Experience			High Maturity	Low Maturity
	High M	Low M	TOTAL	High M	Low M	TOTAL		
Situation #1:								
Type 1 well	5	7	5	3	8	6	4	7
Ask others; do one	37	42	32	31	32	40	34	37
Do all; late/early	49	41	53	57	49	45	53	45
Do 3 drafts	3	1	2	1	2	2	2	2
Other	6	9	8	8	9	7	7	9
Situation #2:								
Ask for quiet	28	38	35	36	35	33	32	36
Ask others	6	5	5	6	3	6	6	4
Find another place	39	32	36	33	38	35	36	35
Do one's best	18	18	18	20	16	18	19	17
Postpone	5	4	3	3	4	5	4	5
Other	4	3	3	2	4	3	3	3
Situation #3:								
Review and check	17	15	18	19	18	16	18	16
Ask others	20	20	11	7	14	20	14	17
Read	4	2	3	4	2	3	4	2
Volunteer	32	33	32	36	28	33	34	31
Decide by self	22	23	31	31	31	23	26	27
Other	5	7	5	3	7	5	4	7
Situation #4:								
Own way	7	10	9	10	9	8	8	9
Ask others	2	1	2	1	2	2	1	2
Discuss w/supervisor	87	85	87	84	88	86	86	87
Do it supervisor's way	2	2	1	2	1	2	2	1
Other	2	2	1	3	-	2	3	1
Situation #5-SICK DAYS:								
President of company	2.1	2.0	2.0	2.5	2.5	2.5**	2.3	2.2
Dept/division Head	2.1	2.1	2.1	2.4	2.4	2.4**	2.3	2.3
Non-co-op co-worker	3.3	3.3	3.3	3.4	3.4	3.4	3.4	3.3
Co-op students	2.5	2.5	2.5	2.8	2.7	2.7△	2.6	2.6
Receptionist or secretary	3.4	3.5	3.5	3.5	3.7	3.6	3.5	3.6
Yourself	2.0	2.1	2.1	2.2	2.3	2.2	2.1	2.2

[a] Situation #5, Means=average number of sick days.
NOTE: For interpretation of significances, see Note Table 9.

analytic group (with the exception of the Lo M/Some Exp group) said the employee should complete all three pieces of the task, even if it involves staying late and/or coming in early the next day. The next most common response was to complete one part well, selecting the specific one after soliciting the advice of a co-worker or another supervisor. Proportionately more of the No Exp group chose the latter option, while the group with Some Exp (like the Total Hi M group) chose to find a way to complete the entire task on their own time. Within each level of Experience, the same pattern prevails: Hi Ms are more likely to proceed on their own without the advice of others, and take full responsibility for doing so.

In the second simulated situation, the respondent was supposedly working in an area populated by other workers too noisy for her/him to concentrate. For every analytic group, the two most common solutions were either to ask the other workers to be quiet or to find another place to work. Within the Some Exp group, the Hi Ms were more likely to find another place to work, while the Lo Ms were more likely to ask for quiet. This may be because of the Hi M/Some Exp group's greater sensitivity to the role one's personality plays in getting along with co-workers, and thus they may be unwilling to be assertive in this situation. The response pattern does not hold up for the No Exp subgroups, where both Hi Ms and Lo Ms are equally likely to assert themselves, but the Lo Ms are somewhat more likely to get up and find another place in which to work.

The third hypothetical problem has students finish their assignment at midday and their supervisor is away from the office: what should they do? Overall, the two most popular "solutions" from among those listed were to volunteer to help someone else who is busy, or to decide for oneself what to do. The largest proportion of Hi M/No Exp students choose volunteering, but with the exception of the substantially greater proportion of Lo M/No Exp students who would seek the advice of other supervisors or co-workers, there were no differences among the analytic groups.

As can been seen in Table 30, almost all respondents in every group agree on what should be done in situation #4: when starting on a new assignment and having figured out a more efficient procedure for doing it than the one the supervisor suggested, more than eight out of ten students would go back to their supervisor to discuss it. Interestingly, of the remainder, relatively more students would do it their own way (without consultation) than would do it the supervisors' less efficient way.

The fifth and final question, for which mean scores (representing days) are shown in the table, differs in form from the other questions. Here respondents were asked how many sick days different categories of employees would take during a six-month period if they were entitled to one day per month. Although not stated directly in the situation presented, the assumption was that none of the people were really sick; thus our intent was to ascertain respondents' opinions about the use (possibly abuse) of fringe benefits.

In general, respondents felt that receptionists/secretaries would take the largest number of sick days, followed closely by non-co-op co-workers. Other co-op students would take between two and three days off, but the president of the organization, the department/ divisional head, and the co-op student respondent would be out the fewest days.

There were some highly significant differences among analytic groups: No Exp students felt that the president and divisional head would take more sick time than did the Some Exp group--probably because, while they may be aware that these people are not necessarily at the organization all the time, they don't yet appreciate that these workers may have legitimate business away from their desk or office and/or have work that can be done at home.

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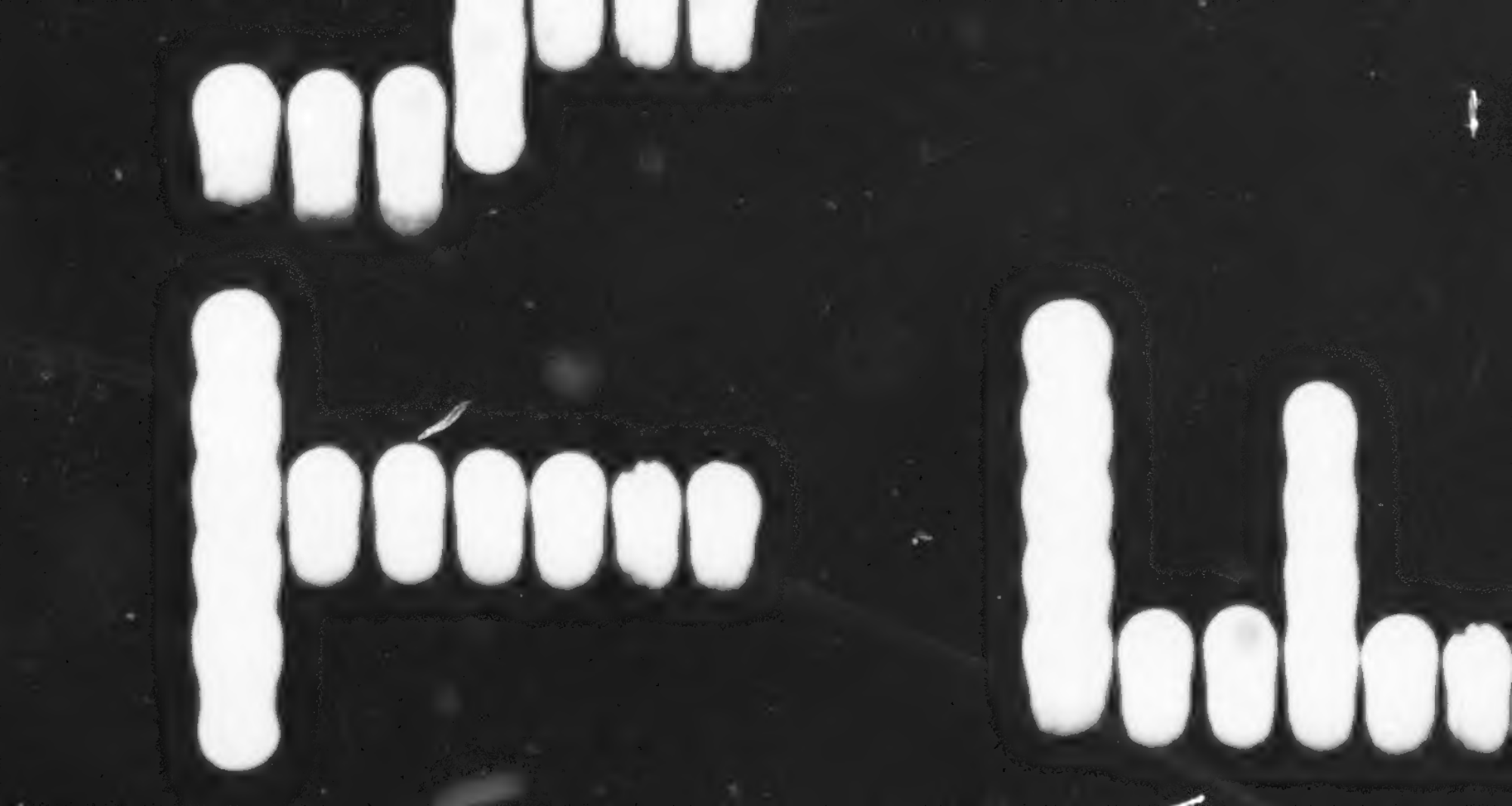
In concluding the presentation of the detailed results, the reader is reminded that in presenting the findings we emphasized



differences among the groups, stressing those that were statistically significant but also mentioning those that approached significance. We have already discussed the fact that, for various reasons, even highly significant differences should be examined in light of their behavioral meaning.

Having immersed the reader in so many details, we recognize that it is easy to lose sight of the forest for the trees, and we, therefore, offer our own recapitulation of "the forest" that we feel is discernible: that is, the groups are more similar than they are different. True, as we will reiterate in the Summary section that follows, there are noteworthy patterns and trends that are exceptions to this generalization. Most noteworthy of all, however, is the consistent outcome that differences in degree of career Maturity or level of Experience (as we defined them) make little difference in the overall picture of the work experience of cooperative education students, except perhaps when low Maturity is coupled with lack of Experience. Discounting this interaction between Maturity and Experience, prior Experience alone seems to be somewhat more associated than is Maturity alone with what students do at work, how they feel about it, and how they are perceived. Indeed, students with Some Experience (in contrast to those with none) appear to be more in touch with real-life demands and somewhat more worldly wise.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

For the past three years, starting in 1977, the Center for Advanced Study in Education, Institute for Research and Development in Occupational Education, has been examining the work patterns, activities, and environments in which cooperative education students are engaged, and their supervisors' assessment of performance in comparison with the regular (non-cooperative education) worker. Focusing on similar issues (as, for example, how much time co-ops spend on different tasks, and with what types of people do they interact on a daily basis), and using similar data collection techniques, our first study explored differences in or at work attributable to the sex of the student.[1]

In 1978-79, with another grant from the then U.S. Office of Education, Cooperative Education Branch,[2] we expanded the earlier study to examine differences in the work activities of female and male students in relation to the traditional or nontraditional nature of their career interests and major. The current research project, conducted during 1979-80, investigated variations in work resulting from the students' degree of career maturity and level of prior experience.[3]

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[1] B. R. Heller and L. Gross. Sex Differences in Cooperative Education: A Study of Sex Stereotyping in Relation to Selected Institutional, Employer, and Cooperative Education Program Characteristics. City University of New York, CASE Report No. 25-75, September 1978. (USOE #510 AH 70082.)

[2] B. R. Heller, L. Gross, and R. Senf. Sex Differences in Cooperative Education: A Study of First-Time Cooperative Education Students in Traditional and Non-Traditional Occupations. City University of New York, CASE Report No. 12-79, November 1979. (USOE #510 AH 80357.)

[3] USOE, Cooperative Education Branch, #510 AH 90296.

Why the preoccupation with work--with attempting to detail in minutiae what co-op students do during a typical day, their working conditions, whether they consider their work activities appropriate and how competent they feel in performing them, and their perceptions of themselves as workers and of their work experience--in comparison with the views of their employers (immediate supervisors)? First, Mount Everest: a review of the co-op literature showed there was virtually no information pertaining to these questions. Second, and of most importance, in order to address the fundamental questions of what are the student-centered learning outcomes of and what can best be taught by a combined work and schooling educational strategy, and to whom (what kinds of students), we felt it crucial to know what was taking place during the work component. What do co-op students experience? Despite the creative variations in the schooling component that presently characterize the programs of cooperative education at more than 1,000 colleges and universities in the country, it is clearly the work experience that differentiates co-op from traditional programs of education. This is the perception of students and of the practitioners whose effort and time is largely devoted to arranging appropriate field placements, the actualization of which often requires fairly massive readjustments in the scheduling and organization of the entire educational institution.

It is within this context, and as a prelude to examining the specific benefits (impact) of cooperative education on participating students that we undertook this series of studies. To understand co-op's impact, we believed it necessary to understand some of the characteristics of the co-op student and the major experiences she/he encounters in the course of work.

Although more than 2000 students took part in some aspect of the 1979-80 study, we limited the final sample to 825 students from 48 four-year colleges and universities for whom we had complete information. These data were obtained from three instruments.

The Student Decision-Making Questionnaire, Part A, described the students' background and academic and cooperative education history; Part B, the "Assessment of Career Decision-Making" (ACDM), provided a measure of career maturity, and was the basis for differentiating mature from less mature students. The lengthy Student Survey asked how students spent a usual day at work, on what tasks, and with whom; their views about their current and any prior placements; their relations with supervisors and co-workers; their reasons for choosing co-op and how they benefited, and their ability to perform specified tasks. Also included were questions designed to tap their appreciation of the importance of work-related traits and some hypothetical situations to elicit much the same understanding, as well as providing cues as to how they might apply them. Supervisors described which activities students participated in and how well and, in addition, the Supervisor's Evaluation contained a list of work-related traits which was used to compare the student with the average (non-co-op) worker.

The primary research question concerned the relation between students' prior work experience and degree of career maturity on the work activities in which they engage; the responsibilities they assume; their attitudes toward work; their confidence, satisfaction, and assessment of their abilities; and the way they are treated and assessed by their supervisors as compared with the average (non-co-op) regular employee with a similar job title. To answer this question, students had to be differentiated for data analysis into Experience groups and Maturity groups.

The total number of previous co-op work placements was used to divide the sample into a No (prior) Experience group and a group of students and with Some (prior) Experience. Any work other than co-op was discounted, on the assumption that co-op work represents the first adult work experience--salaried, supervised, and related to future career expectations. Although a simple count of the

number of placements does not discriminate between one 2-month and one 6-month work experience, nor take into account the age-grade level of the student at the time, nor reflect potential differences between a student who had three placements with three different employing organizations from the student who had three placements with the same organization, it proved to be an adequate, acceptable definition. First, it yielded two groups of approximately equal size--an important consideration in the analysis and interpretation of results. Second, it made use of the entire sample with complete data. And third, the results of two key questions (what tasks students do and what traits they exhibit) were essentially the same when results using this definition were compared with the results of a more restricted definition (that is, one which defined Experience by a combination of number of placements and college year).

The No Experience group included 436 students (53% of the sample) who were on their first co-op assignment. At the time of this study, they were--as expected--all working for their first co-op employer and 92 percent were co-oping full-time. Sixty percent were in their first or second year of college. Almost two-thirds of the group was male, largely majoring in engineering (46%) and business (22%). Of their supervisors, 79 percent were male.

In contrast, the group with Some Experience consisted of 389 students (47% of the sample) who, at the time of this study, were on their second to at least sixth placement; of this group, about 60 percent were on their second placement (40%), or third one (19%). On the average, the Some Experience group worked for 1.6 different organizations. With respect to year in college, 62 percent were in their fourth year, and an additional 25 percent were in their third year. Engineering majors predominated (58%), followed by business majors (16%). Reflecting the large proportion of engineering students, the Some Experience group was 72 percent

male and was supervised by mostly male (87%) supervisors. For some reason, slightly more of the Some than of the No Experience group had a full-time co-op job--96 percent.

In some respects, defining Maturity presented more of a problem. The ACDM was the only measure we had, and while its author claims that this test is applicable to college students, it may not be so for cooperative education college students: 85 percent of the total sample scored at the highest levels, yielding a very skewed distribution that was virtually useless for data analysis purposes. We therefore employed an alternative classification method, defining two Maturity groups based on their score on the most advanced ACDM stage (Clarification)--even though for 15 percent of the sample this did not represent their highest stage score (stage score being the standard ACDM way of determining career maturity level).

Using our definition, we formulated two groups, one of which was relatively more mature than the other: the High Maturity group (Hi M) includes 380 students (46% of the sample), of whom 177 fall into the Some Experience group and 203 into the group with No Experience. About two-thirds (68%) of the Hi M Total group is male (and 82% of their supervisors are male), 59 percent are in their second or third year of college, and 66 percent are majoring in either engineering (51%) or business (15%).

The Low Maturity (Lo M) group of 445 students (54% of the sample of 825) contains 69 percent males (84% of their supervisors are male); these Lo Ms are majoring primarily in engineering (52%) and business fields (22%). About 62 percent of this group is in the second or third year of college; like the Hi M group, somewhat more than half (52%) are on their first co-op (i.e., part of the Total No Experience group).

For analytic purposes, in addition to the two Total Experience groups--Some and No Experience--and the two Total Maturity groups--

Hi and Lo M--the data were examined for the following four subgroups: Hi M/Some Experience, Lo M/Some Experience, Hi M/No Experience, and Lo M/No Experience. Means and frequencies were based on the number of respondents to the particular item; t tests were used to determine significant differences where we had scaled scores, and chi square tests (corrected when appropriate) for frequency data involving proportions.

Before summarizing and generalizing about the major results, in descriptions in the body of this report we focused on statistically significant differences among and between groups, even though on most items the groups did not differ. The significant exceptions that are discussed help to define the characteristics of the analytic groups--especially as those may relate to differences in their work experience. In general, the exceptions seemed to characterize (that is, to occur most frequently between) the Experience groups and, within the No Experience group, between Hi Ms and Lo Ms.

By emphasizing differences, as for example, that one group was significantly better than another on 11 of 50 items, we often lose sight of the fact that on 39 items the groups did not differ. Moreover, sometimes very small differences (say, .2 scale points) can be statistically significant even though one would be hard pressed to translate this into behavioral terms. Although we will attempt to make programmatic sense of this aggregate data, it remains the burden of co-op practitioners to make effective use of the results in terms of what they know about their own programs as well as the goals and objectives their institution has for its cooperative education students.

In this concluding section, we first present a composite picture of the work experiences of each analytic group; then, general conclusions. What follows is a liberal interpretation of the outcomes. The reader is cautioned that the generalizations, although supported by the detailed results, are deliberately stated broadly--to stimulate further research and consideration of programmatic action. Reading the complete results is strongly advised.

Experience. Students with Some Experience (Experienced students) differ from students with No (previous co-op) Experience (Inexperienced students) only in certain respects. First, they tend to have somewhat higher educational aspirations, even though the preponderance were engineering majors for whom training beyond the baccalaureate is rarely required for entry-level jobs. The Experienced students are also somewhat more optimistic about entering their first-choice career, but except for the fact that the No Experience group was more interested in helping people, there were no differences in the reasons underlying the groups' selection of a career area.

Although at the present time the groups do not differ, when they made the initial decision to pursue a cooperative form of education, more of the No Experience group thought it was an important way to obtain career information, to help them understand what they wanted to do and make personal contacts, and to round out their education. Initially, the group with Some Experience considered co-op education as an important source of tuition money. Their original reasons notwithstanding, in comparison with those having No Experience, the Some Experience students felt that, for a variety of reasons, co-op was more beneficial. They, of course, had a significantly g eater number of co-op experiences as a basis for this opinion. While co-op generally does not present students with problems, maintaining good grades was more of a problem for the Some Experience group, but settling on a definitive major was more troublesome for students with No Experience.

The groups spent significantly different amounts of time on only seven of 34 work tasks--and tended to on five others. The No Experience students spent more time filling out forms and filing--fairly routine tasks, while those with Some Experience spent more time analyzing data, designing instruments, (computer) programming, writing reports, and instructing people--all fairly high-order tasks. Support for the reports that the Some Experience group

spent time instructing others comes from their statements that they spent significantly more work time (and non-work or social time) with people with less responsibility than they have--those from both their own department and other departments. Therefore, one of the characteristics that distinguishes co-ops with prior Experience from first-time co-ops is their supervisory responsibilities. With respect to work tasks, however, it is important to note that the two Experience groups spent their work time in relatively the same way, and with no significant differences on the majority of listed tasks.

In terms of how well they performed or could perform each of the same 34 tasks compared with non-co-op workers, there were greater differences between the Some and No Experience groups, tending to favor the former. Experienced students claimed to perform better at the following tasks, at most of which they spent more time: analyzing data, operating a computer terminal/console, and programming (with all of which their supervisors concurred), and categorizing data, designing instruments, and writing reports. Their supervisors thought they were also better at keypunching than did the supervisors of the No Experience students. The No Experience group rated itself as performing better at dealing with patients and with clients, while their supervisors indicated that they tended to be better with clients, but also with writing form letters.

Supervisors of the Some Experience group felt that their students knew more about the work of the department/division in which they worked, and about the overall work of the organization--but there were no differences in the self-reports of the students. Both student groups felt, however, that they know more about these things (as well as about what their co-workers and supervisors do, and about how their work contributes to the company's aims) than their supervisors credited them with.

With respect to a list of 50 work-related traits or characteristics, there were significant differences between the groups on a

total of five. On only one, however--trying to do better than other workers--did the difference favor the Some Experience group. In contrast, No Experience students found the following traits to be more important to their jobs: eagerness to learn new things, compliance with rules, appearance of working hard, and reliability. Supervisors of these groups, given the same list, found no significant differences at all between the two Experience groups.

With these few differences, then, between the groups with Some and No Experience, there should be few variations in how they responded to hypothetical questions that simulated problem-solving work situations: indeed, the majority of respondents in each group advocated the same solution to four of the five problems.

Maturity. As indicated above, the Hi M and Lo M groups were demographically quite similar. The major dissimilarities were that the Hi M group was less certain about entering their first-choice career, and that the important reasons underlying their career choice (in contrast to the Lo Ms) related to obtaining work that was steady and secure, as well as prestigious.

Both when originally selecting a co-op education and Now, the Hi Ms favored this nontraditional form of education because it encouraged personal contacts, others said it would be good for them, and it would make their families happy. The Lo M group gave less importance to each of the seven listed factors and there was no instance where a difference favored them. Generally, Hi M and Lo M students benefited greatly from co-op, but the Hi Ms rated it better when it came to encouraging feelings of independence and acceptance of responsibility. Both groups reported the same types of problems stemming from their co-op experience(s), although such problems were mild.

How was their work time allocated? Again, the answer is more alike than not. Hi Ms spent more time at stamping, routine phone

calls, and dealing with patients, and Lo Ms at computer programming. With respect to people, Hi Ms spent more work time than did Lo Ms with people from their own department at or above their supervisors' level of responsibility. In contrast, Lo Ms spent more time with people not employed by their company. An analysis of time spent socializing with other workers showed no differences for students differing in Maturity and no relation to work time spent with these people.

Hi M students say they are better at typing (actually, very few respondents of any kind typed), while their supervisors rated them better than the average worker at collecting and sorting data and at working with others. The Lo M group reports being better at operating a computer terminal, but their supervisors don't feel they are better than the average employee at any task.

There were very many significant differences in work-related traits, and all favored the Hi M group. Although the respective groups of supervisors agree that Hi Ms and Lo Ms were better than the average worker, the Hi Ms were rated more so. But the specific traits mentioned by the Hi M students and their supervisors are not in perfect accord. Thus the Hi M students claim it is important to comply with rules (supervisors agree that they do), meet deadlines, finish tasks speedily, comply with unwritten practices, behave like others, appear hard working, be independent, focus on work, behave maturely, and get to know people in other departments. Their supervisors, on the other hand, lauded them for their judgment, adaptability, loyalty, ability to make decisions, eagerness to learn, efficiency, ability to work under pressure, anticipating things, keeping busy, pitching in, communicating clearly, following instructions, reliability, high quality work, initiative, knowing when and whom to ask for help, assuming responsibility, volunteering, and being organized.

With such dramatic differences between the two Maturity groups, we would expect some dramatic related differences. In examining the

responses to the hypothetical questions, however, the Hi M and Lo M groups were comparable; and only in one or two other instances were there differences. For example, the Hi M students felt that personality was important in gaining respect for oneself (they felt more free to ask their co-workers for information about how to get along with others), and also that skills and qualifications play a part in getting along with supervisors as well as with co-workers.

The major differences between Hi M and Lo M groups as we have defined them relate almost exclusively to what they perceive as important worker traits and to how their own qualities are perceived by others. These perceptions, however, do not seem to make a substantive difference in their work assignments, but may show up more strongly in their interpersonal interactions.

Some Experience by Maturity. In this section, we will compare Hi M and Lo M groups with Some Experience. Descriptively, the groups were fairly similar except that a somewhat greater percentage of the Lo M supervisors were male (91% vs. 83%).

The two subgroups did not have different educational aspirations nor different reasons for their choice of career. However, in choosing a co-op program initially, the Hi Ms gave more weight to others' feelings that it would be good for them and because it would make their families happy. Now, too, the Hi Ms felt co-op was important for those two same reasons; also, it has become important as a way of earning extra money and of making personal contacts. With respect to benefits accruing from co-op, the Lo Ms (more so than Hi Ms) felt co-op matched the work they wanted and was more relevant to their major.

Hi M/Some Experience students reported spending more time stamping/stapling and shelving supplies, while Lo M/Some Experience students said they spent more time instructing people and working at tasks they considered instructive. The groups did not differ in either the work time or social time spent with any other workers.

Hi Ms reported they dealt with patients and did art work better than Lo Ms, but their supervisors indicated no differences. Lo Ms said they were better at collecting and sorting data, and analyzing and categorizing it--but their supervisors felt they were better than the typical worker only when it came to keypunching and security checks. Furthermore, the two Maturity subgroups were comparable in terms of the role they attributed to personalities and to skills and qualifications; and in the content of their interactions with co-workers, except that Hi Ms were more likely to ask co-workers more personal questions--how to get along with others and how to get special favors.

With respect to worker traits, Hi Ms felt it was more important to comply with unwritten practices, appear hard working, tolerate the views of others, and behave maturely. Their supervisors credited them with being eager to learn new things and doing work of high quality. Supervisors of Lo M/Some Experience students did not feel they exhibited more of any trait, but the students themselves reported that ambition and eagerness to learn were important qualities.

Comparisons on most of the other areas and items yielded few if any differences, pointing out very clearly that among Experienced workers, level of Maturity does not significantly differentiate the co-op work experiences of students.

No Experience by Maturity. Comparing Hi Ms and Lo Ms with No Experience, as we will do in this concluding summary section, yields a somewhat different picture--one where differences in Maturity do relate to the work experiences and to the workers' perceptions.

Descriptively, the Hi M and Lo M/No Experience groups are comparable, except with some small disparity in major: more of the Lo Ms (48%) than of the Hi Ms (44%) are Engineering majors, and the same is true for Business majors (24% of Lo Ms, 19% of Hi Ms). With these exceptions, the groups are alike.

However, they do not feel the same about their work experience: Hi M/Inexperienced students feel significantly less certain than their Lo M counterparts that they will enter their first-choice career. Hi Ms placed more importance on prestige as a career choice determinant, and when first choosing a co-op education program considered personal contacts, and the advice and happiness of others more important than the Lo Ms. At the present time, the advice of others and well-rounded education are important reasons for choosing co-op, according to the Hi Ms. For them, co-op improved their general and specific skills and taught them to accept responsibility. In contrast, Lo Ms reported that co-op taught them about work aspects they dislike. Hi Ms liked the type of work they were doing better than the Lo Ms, and were more satisfied with their working conditions. The Lo M group reported spending (too much) time waiting and at activities that were at too low a level.

When it came to specific work tasks, there was one difference: Hi Ms spent more work time dealing with clients. They also spent more work time with co-workers, both in and out of their department, at or above their supervisors' level of responsibility. Lo Ms spent more time socializing with peers within their department. While there was no difference in the students' reports about how well they performed any one task or set of tasks, the supervisors of the Hi M group thought they were better at proofreading, working alone, filing, and collecting and sorting data. According to their supervisors, the Lo M/Inexperienced group performed no task better than the Hi M subgroup in comparison to the average (non-co-op) worker.

According to the reports of the Lo M/No Experience student group and of their supervisors, they do not exhibit more of any one of 50 work-related traits (than their Hi M counterparts). However, Hi M/No Experienced students indicate the following traits as more important: accuracy, assertiveness, ability to make decisions, compliance with rules, meeting deadlines, behaving like others,

independence, focusing on work, being a good sport, and getting to know people in other departments. The supervisors of this group also credited them with exhibiting more of a long list of traits--18 of the 50 listed.

Conclusions and Recommendations

This investigation, in addition to providing answers to the specific questions it sought to address, yielded other information of interest and potential value. Before considering the conclusions and implications pertaining to Experience and Maturity, we will speak to some of these other incidental--but salient--issues.

- In general, four-year college and university students with cooperative education experience(s) seem to differ from other (non-co-op) students in terms of career sophistication.

Purported to be appropriate for use at the four-year college level, the "Assessment of Career Decision-Making" (ACDM) (an instrument designed to differentiate students into four distinct, sequential stages of career maturity) is too gross a measure for college students who have had some experience with cooperative education. Most (85%) of our sample of 825 students, all of whom had had (or were on) at least their first job placement, scored at the test's highest levels. Of the 436 first and second year students on their first co-op at the time the test was administered, 80 percent also scored highly. Thus it is apparent that, at any rate for our co-op sample, this instrument does not serve the purpose its author intended. The recommendation is clear: the ACDM is not a useful measure for co-op research and should also probably not be used as a diagnostic tool for students in co-op programs.

Additional evidence (including studies by other researchers in the field) substantiates our finding that the career orientation of the cooperative education student differs from his/her non-co-op counterpart. One illustration relates to co-op students' reasons for choosing their career major. Because our sample is composed

largely of engineering and business majors, we would expect them to be more data- and things- than people-oriented. However, in relation to other college students we have studied, they are much less interested in helping people, in contributing to society, and in their general emphasis on similar altruistic, and idealistic motives. Therefore, a question for future investigation is whether cooperative education self-selects students unique in these ways.

- Approximately 25 percent of these co-op students have changed major since they started college. Dramatic changes in major tended not to occur. Rather, the change was likely to be from one to another area of specialty within the same field, or to a very closely allied one.

A change in major is most likely to take place before or during the first co-op work placement (which most usually starts in the second, sophomore, year), but we neither have nor know of any evidence that allows us to estimate whether our results represent a usual proportion; i.e., does one-fourth of the non-co-op college population change major by or in the second year? Is this a usual proportion for these majors? And, more importantly for cooperative educators, is it attributable to any part of the co-op experience, or to unique characteristics of the potential co-op student? In this and our related studies, changes in major do not relate to sex, curriculum, Experience, or Maturity (as we have defined these variables).

- Like the general undergraduate college population, cooperative education students aspire to advanced schooling. Only slightly more than one-third (35%) of this year's sample indicated that the baccalaureate was the highest degree they sought. Fully half the students were interested in pursuing a master's degree, and the remainder were considering a doctorate or professional certification. Desire for advanced education does not relate to either maturity or experience (as defined in this study).

Since about 70 percent of the co-op students we studied do not plan to complete their education with the attainment of the baccalaureate degree (keeping in mind that we included a few colleges that offer a combined bachelor's/master's degree), one of co-op's most compelling and saleable arguments may need to be reconsidered--that is, the opportunity it provides both students and employers to examine their interest in one another prior to the students' graduation from college.

- The cooperative education work experience is important not only in and of itself, but because it also sets precedents and expectations for the future.

We have noted before (Heller and Gross, 1978; Heller, Gross, and Senf, 1979), that as a direct result of experiences on a first work placement, co-op students tend to: prefer a supervisor of the same sex as the person who supervised them; feel most competent at tasks at which they spent the most time; and perceive those tasks they have been assigned (no matter how routine, creative, responsible, potentially hazardous, boring, or challenging) as appropriate.

The results of the present study confirm co-op's importance in setting work expectations (especially with respect to the relation between spending time at a task and feeling competent at it) and supply additional examples. As one illustration, co-ops (and, we suspect other workers as well) tend to socialize at work (e.g. eat lunch, chat) with the same types of people with whom they conduct business. Most likely, we associate most often with other workers in our own department/division, followed by workers from other departments/divisions within the organization, and then with technical and sales people not employed by the company.

Since the types of people with whom co-ops work vary in relation to the sex of the co-op student as well as to his/her Experience and Maturity, some though might be given, both by employers and supervisors, to purposefully and systematically

exposing students to more varied types of workers by, for example, placing them in new environments after their first placement. A second placement within the same employing organization may be in an unfamiliar division--if such flexibility is practical--or with another supervisor if it is not. Implicit is the authors' belief that work placements should be made as diverse as possible, so as to vary the students' day-to-day experiences. To do otherwise, we feel, does not maximize the uses of cooperative education and may, in fact, instead limit experiences and reinforce narrower student views about acceptable or desirable work situations.

- Cooperative education students are treated specially on the job.

In general, students enjoy co-op and like best the way they are treated by their supervisors and co-workers. They also like (especially the Hi M/No Experience students) the kind of work they do. Both students and supervisors, however, feel co-ops are treated differently from regular (non-co-op) workers in similar jobs. For example, in comparison with No Experience Students, students with Some Experience indicated that higher-level work was expected of them. Indeed, they do spend more time on higher-order, people-oriented tasks (as does the Hi M group in general) that seem to involve interpersonal skills, especially supervisory ones.

Irrespective of Experience, Hi Maturity students felt that their supervisors took a more personal interest in them than in their non-co-op counterparts. Hi Ms spend more time for example, with workers at high levels of responsibility, and less time with people at peer levels of responsibility. This may be a result of their being perceived as having relatively more potential than Lo Ms. (This is especially true for Inexperienced, Mature co-ops.) Together, the evidence suggests that the Hi M student is more open and both more concerned about and more sensitive to the feelings of others, as well as to the value of personal contacts (important reasons for her/his choosing a cooperative form of education);

they also recognize the importance of "personality" in and at work, and are more likely than any other analytic group to discuss these things with their co-workers.

Supervisors report that cooperative education students are given fuller explanations, more help with non-work-related problems, and that they have a more personal interest taken in them. The supervisors of the Lo M/No Experience group take a more personal interest in their co-ops than do the other groups of supervisors. It may be because this group of supervisors contains the largest proportion of females, who may actually be more interested, perhaps of their own orientation, or because they (accurately) perceive the Immature/Inexperienced co-op as being needy of help. Interestingly, despite the supervisors and students recognition of their special status as co-ops, students did not feel they took advantage of it in terms of complying with company rules and policies, and all students said they would be treated no differently from the regular worker for rule infractions.

- Co-op students are at least as able as and in many instances more able at their work than are regular non-co-op workers.

Supervisors rate the ability of co-op students well above that of the average worker when it comes to performing most of 34 work tasks. Supervisors found few differences among any of the analytic groups in comparison with the non-co-op worker.

There were, however, relative differences among the groups even though all surpassed the regular worker. For example, Lo M/ No Experience students were never rated better than their Hi M counterparts, while the latter group was significantly better than the Lo Ms on one-third of the listed activities--again, many of these dealt with interpersonal skills. Overall, the match between supervisors' and students' ratings was closer for the Experience groups than for the Maturity groups.

- Co-op students exhibit more positive (i.e., productive) work-related traits or characteristics than the average worker, and the students clearly recognize what traits are important in job performance.

With respect to traits, there is generally close agreement between those that students report as important for their job and those that their supervisors say they exhibit--and exhibit to a higher degree than the non-co-op worker. On 44 of 50 listed traits, supervisors rated co-ops better (exhibiting more of the characteristic) than the average worker. Degree of Maturity was especially important to the supervisors' ratings. Irrespective of Experience, Hi Ms were seen more positively than Lo Ms, but Hi Ms/(with) No Experience were rated significantly better than all groups--(Mature and not yet spoiled?) These data suggest that counseling programs aimed at providing new co-ops with orientation to behaviors expected of them at work might be fruitful, especially for new co-ops who can be identified as relatively less mature.

Support for this recommendation comes from looking at the students' own ratings concerning the importance of these same set of traits in the performance of their work. Hi Ms, in comparison with Lo Ms, indicate the importance of many traits; the Lo Ms, however, indicate only one--knowing when to ask for help. Since Hi Ms are perceived as more productive by important others, and are treated differently, efforts designed to foster maturity seem warrented.

- In the work context, Maturity and Experience appear to be independent factors, with Experience, in general, the more critical variable.

First, as we defined these factors in the present study, Maturity and Experience are unrelated: the χ^2 between groups differing in Maturity and Experience is insignificant. Many portions of the results support the contention that level of Experience makes much

more of a difference than did degree of Maturity. As one example, consider the differences in activities in which the sample students engage: students with Some Experience spend more time at tasks that seem to require more training and responsibility than do students with No Experience (and they themselves report that higher-level work is expected of them). There were considerably fewer differences overall when these same data were analyzed for Hi and Lo Maturity groups.

Only when it came to traits did Maturity seem to be more critical than Experience. On only one of 50 traits was there a significant difference between the two Experience groups. Many more differences were apparent between groups differing in Maturity, as we saw above. As a matter of fact, in this set of data there were clear and consistent differences between Hi Ms and Lo Ms, and always in the direction that could be predicted using a common, everyday definition of Maturity. (Although we recognize that the ACDM turned out to be an inappropriate measure, these outcomes lend some face validity to our adaptation of the procedures for determining relative degrees of maturity).

The close match between the ratings of traits by Hi M and Lo M students and their supervisors suggests, moreover, that Mature students have a better understanding of the demands of the real world, even if they don't necessarily perform different tasks or perform them at differential levels of competence.

- The results of the present investigation suggest that more attention (including more research) needs to be focused on how much and what kinds of experience cooperative education should offer its student-clients.

Since co-op practitioners can exercise more control over Experience than over Maturity (as we have defined them), perhaps the most crucial question is: after the first one or two, what do additional placements add to the student's total cooperative education experience?

First, a greater number of placements does not necessarily mean increased exposure to different work settings or environments; 60 percent of students who were on at least their second placement at the time of this study worked for the same employer each time; another 25 percent of the entire group had worked for only two different employing organizations. Taking into acccunt all students, they worked for an average of 1.6 different employers.

As an argument against multiple placements (with no judgment made as to how many placements constitute "multiple"), students with prior co-op experience are more likely than first-time co-ops to want to return to the same employer for another co-op. The majority would even do the same type of work. (Inexperienced co-ops also say they would like another placement with the same employer, although proportionately fewer would--perhaps because they have less basis for comparison.) Students, especially those with Some Experience, report that they would work for their co-op employer full-time after graduation from college. Continued placement with the same employer may thus serve to restrict the co-op students' experiences and exposure to a larger world of work, and their desire for it. Although general studies of alumni suggest greater job satisfaction among co-ops, at least initially, these studies are generally fairly short-term followups. What happens in the long-term has not yet been carefully assessed; some clues, however, may exist in the general literature on satisfaction with work. Research relating job satisfaction to diversity and variation in employment history may be especially relevant.

On the other hand, having several work placements reinforces the co-op experience. By virtue of their investment (i.e., involvement) in a co-op program, students with Some Experience, in contrast to the new co-op, find the experience richer, more useful, and more important in many more ways. A few illustrations from the data: in terms of how they feel Now, more of the Some

than of the No Experience group acknowledged as important many more reasons for choosing a cooperative form of education, and, moreover, the Some Experience group Now feels co-op is more important than they did in retrospect when first electing it. In other words, participation confirms the value of participating.

Co-op, even with multiple work placements, causes students few problems, allows them an opportunity to earn money for tuition expenses, and results in a greater likelihood of employment. However, with Experience come problems of maintaining friendships. We cannot tell from the data whether this relates directly to the movement of the co-op student from the school to the work situation and back again (and again), or the finding that students with Some Experience seem to be more concerned with other people and with interpersonal relationships generally. There is also a suggestion that Some Experience students feel more pressure to perform at higher levels than do Inexperienced ones, which is a realistic reaction considering that they are upperclassmen soon to graduate and take their place in the adult world.

In our opinion, the most critical data regarding multiple placements are the activities in which Some and No Experience students engage. As mentioned, throughout this document we stressed differences between these two groups, thereby undermining the finding that they spent relatively the same amount of time on the same tasks. There were a few important exceptions. Some Experience students spent significantly less time filling out forms, and filing; and more time analyzing data, designing instruments, programming computers, and writing reports, as well as instructing other workers--but these are only seven of 34 tasks, and on the remaining 80 percent they do not differ from students on a first co-op placement.

As an aside (albeit a related one), although co-op students with Some Experience spend significantly more time instructing

other workers, probably people at lower levels of responsibility than they themselves have, they also socialize with these workers. It would seem, therefore, that students past their first placement would come into less frequent contact with influential others at a time in their own development when such people may have greater potential importance as guides and mentors.

To return to the question of activities--what co-ops do on a day-to-day basis, our previous studies showed that people tend to feel more able at tasks they do most frequently. In other words, we saw a positive relation between doing a task and feeling able to do it well: perhaps simply a matter of practice. In this study, this relation obtained much more strongly for the Some Experience than for the No Experience students. However, considering there were relatively few differences between the groups in time spent on activities, then the repetition of tasks, while reinforcing feelings of competence, do so in regard to a limited number of activities. To put it still another way, if a person does the same few things again and again, coming to believe she/he does them well, that is a positive outcome--but what of the other tasks he/she never or rarely gets to do?

Our bias is that where multiple placements are offered or required by a co-op institution, every effort should be made to make each placement different, especially in terms of students' daily activities. Even though the Title VIII legislation mandates a match between co-op work and the students' academic or occupational objectives (and 90% of the entire sample of students are in placements related to their major), placing students in essentially the same job with the same organization constitutes a very narrow interpretation of the law. Certainly, in our opinion, career exploration and job experimentation are viable, valuable, and worthwhile academic/occupational objectives--even for students who have made clear and definitive decisions. In today's world, it is becoming increasingly common for college educated people to change

careers several times during their adult work life. Diverse preparatory education will be especially important if co-op can offer or encourage younger people toward greater experimentation at a time when they have more freedom to do so and when it represents relatively less personal cost and agony. Are we not then responding to the goals of education as when we prepare students for a specific career? At the very least, we feel that cooperative education should attempt to insure students the same opportunity for growth--planned, varied, and sequentially more complex learning activities outside the classroom as we offer within the structure of the discipline taught in the classroom.

Finally, a cogent argument can be made that, granting that we defined Experience adequately and assessed the daily routines of Some and No Experience students well, we did not examine learning outcomes. In fact, we have no evidence that Experienced and Inexperienced students are not indeed learning different things. We agree that such an interpretation is both accurate and an area of fruitful inquiry for the future. We feel strongly, however, that this argument does not negate our concern for systematic variation in work experiences. Without different stimuli (in this case, different activities, settings, and/or personal interactions), to expect different learning outcomes "to just happen" is not only fanciful, but the subtle outcomes that may occur are probably beyond our current state of readiness to recognize, enumerate, or assess. The planned intervention of practitioners can alter, even in the absence of further research, the stimulus $\longleftrightarrow$ response (i.e., outcome) pattern. Through programs of supplementary guidance and orientation, or directly through the academic component, students can be made more aware of, more alert to, and interested in maximizing the opportunities and benefits inherent in the cooperative education work placement.

APPENDIX A

PARTICIPATING COLLEGES AND UNIVERSITIES

Akron, The University of	Donald R. Burrowbridge, Director Cooperative Education Program
Alabama, The University of	James B. Osborne, Director Cooperative Education Program
+Albany State College (Georgia)	Mary J. Follings, Director Cooperative Education Program
Antioch College	Dan Hotaling, Chairman Center for Cooperative Education
Baldwin-Wallace College	Kathleen A. Razi, Director Counseling and Advising Center Field Experience Program
Brigham Young University	Lane A. Compton, Director Dr. Cliff S. Barton, Assistant to the Dean Engineering Sciences and Technology
Cincinnati, University of	Betty Stilgenbauer, Assistant Director Professional Practice Division
Clemson University	J. A. Selter, Director Cooperative Education Program
Cleveland State University	Dr. Joseph W. Cole, Director Career Services Center Cooperative Education Program
Detroit Institute of Technology	Cheryl Termaat, Coordinator Cooperative Education and Career Planning
Detroit, University of	Donald C. Hunt, Director John Daniels, Coordinator Career Planning, Cooperative Education and Placement
Drexel University	Stewart B. Collins, Director Department of Cooperative Education
Ferris State College	Dr. Lowell Chapman, Coordinator Cooperative Education Program Head, Accounting Department
Fort Lewis College	James K. Ash, Director Cooperative Education
Houston, University of	J. E. Cox, Director E. J. Lanik, Associate Director Engineering Practice Programs, Cooperative Education Cullen College of Engineering

+Idaho, University of	Dr. Anthony L. Rigas, Director Cooperative Education Program College of Engineering
Illinois Institute of Technology	Donna Plumb, Director Cooperative Education
Illinois State University	Marlyn Lawrentz, Ed.D., Coordinator University Professional Practice
+Indiana University, South Bend	Kitty Arnold, Director Career and Placement Services
Indiana University of Pennsylvania	John Johnson, Internship Coordinator Cooperative Education Program
Insurance, The College of	Theodore Kole, Ph.D., Director Cooperative Education Program
Jackson State University	Charles E. Bishop, Director Cooperative Education Program Career Counseling and Placement Center
Jersey City State College	Jennifer Jones, Coordinator Academic Career Planning and Placement Cooperative Education Program
Kalamazoo College	Warren I. Thomas, Director Career Development Center
Louisville, University of	Professor Joseph H. Pierce, Director Office of Cooperative Education and Placement Speed Scientific School
Maine at Orono, University of	Ed Andrews, Director Cooperative Education Program
Marquette University	Dr. John P. Bradish, Assistant Dean College of Engineering
Merrimack College	Professor Mary Lee Underhill, Director Cooperative Education Program
Mississippi State University	Luther B. Epting, Director Cooperative Education Program
Morgan State University	Lena M. McKinney, Director Cooperative Education Program
Nebraska, University of, Lincoln	Dr. A. H. Witte, Coordinator Cooperative Education Department of Electrical Engineering

New Mexico State University	Dr. Maurice E. Hamilton, Director Cooperative Education Program
Northeastern University	Paul M. Pratt, Dean Richard E. Sprague, Assistant Dean Cooperative Education Program
Ohio State University, The	Tom L. Smock, Director Cooperative Education Program
Pace University	Alice Korngold, Coordinator Cooperative Education Program
*Puget Sound, University of	Frank L. Hruza, Ph.D., Director Cooperative Education Program
Purdue University	G. W. Bergren, Coordinator J. E. Little, Associate Coordinator Cooperative Education Program Kramert Graduate School of Management
Rutgers University	Dr. Maurice P. Hartley, Director Cooperative Education Program Cook College
Saginaw Valley State College	Eugene J. Hamilton, Director Cooperative Education Program Division of Placement and Continuing Education Services
Shippensburg State College	Professor Robert M. Comfort, Coordinator Interns and Placement School of Business
South Alabama, University of	E. R. Cimino, Director Peggy Alums, Coordinator Cooperative Education and Placement Office
South Florida, University of	Glenda F. Lentz, Director Cooperative Education and Placement
Tennessee Technological University	Lawrence W. Hester, Coordinator Cooperative Education Program
Tennessee, University of	Elizabeth M. Corlew, Coordinator Cooperative Engineering Program Engineering Department
Towson State University	James V. Martin, Director Cooperative Education Program
Virginia Polytechnic Institute and State University	H. E. "Chip" Bowling, Ed.D., Director Cooperative Education Program

Washington, University of	Jody Burns, Central Coordinator Cooperative Education Program
Wayne State University	Marie Menezes, Assistant Director University Placement Services
Wentworth Institute of Technology	Susan E. Kirkpatrick, Director Cooperative Education Program
West Virginia Institute of Technology	Carroll G. Carter, Director Cooperative Education Program
Western Kentucky University	Patricia B. Brelsford, Director Office of Cooperative and Experiential Education
Wisconsin, University of, Stout	Dr. M. James Bensen, Assistant Dean Cooperative Education Program School of Industry and Technology

*no student responses
+no complete data

APPENDIX B

INSTRUMENTS, 1979-80 CO-OP STUDY

STUDENT DECISION-MAKING QUESTIONNAIRE
Part A. B1
Part B (ACDM) B3

STUDENT SURVEY B5

SUPERVISOR'S EVALUATION. B13

CENTER FOR ADVANCED STUDY IN EDUCATION
Graduate School and University Center, City University of New York

STUDENT DECISION-MAKING QUESTIONNAIRE

Part A

1. Please indicate your sex: ☐ Male ☐ Female College major: _____

2. In what year of college are you currently enrolled? ☐ 1st ☐ 2nd ☐ 3rd ☐ 4th ☐ 5th ☐ Other; please specify: _____

3. What is the highest degree you plan to attain? ☐ Bachelors ☐ Masters ☐ Doctorate ☐ Professional (M.D., D.D.S.) ☐ Other; specify: _____

4. Have you changed your major since entering college? ☐ No ☐ Yes; please describe the change:

   From: _____ To: _____

5. If you weren't on co-op, how much of a problem would it be to finance your education?

   ☐ No problem ☐ Some problem ☐ Major problem

6. On your present co-op job, what is your job title? (please try to be specific.) _____

   _____

7. Is your present co-op job related to your major? ☐ No ☐ Yes
   Please explain: _____

8. To the best of your knowledge, is the organization for which you are now working a:

   ☐ Federal governmental agency
   ☐ State or city (municipal) governmental agency
   ☐ Non-governmental, but non-profit
   ☐ Private, profit-making
   ☐ Not certain

9. Check to indicate which of the following best describes the type of business or organization in which you now work as a co-op student:

   ☐ Health or social services (hospital, rehab. center, nursing home, etc.)
   ☐ Educational agency (school, college)
   ☐ Retail store
   ☐ Food service (cafeteria, restaurant)
   ☐ Law enforcement, security
   ☐ Law firm, legislature
   ☐ Communications (media, library, T.V., newspaper, radio, etc.)
   ☐ Utility, power company (oil, gas, mining, etc.)
   ☐ Banking, finance organization (stocks, insurance, accounting, etc.)
   ☐ Engineering organization
   ☐ Computer organization
   ☐ Manufacturer, factory
   ☐ Park, farm, agricultural station
   ☐ Advocacy agency or public affairs
   ☐ Research organization or laboratory; What type: _____
   ☐ Other; specify: _____

10. Including this placement, how many co-op assignments have you had all together?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 or more ☐ Other

11. As a co-op student, have you worked for the same company (the present one or any other) more than once? ☐ No ☐ Yes; if yes, on how many placements? _____

12. Would you want to work for your present employer again during another co-op placement if that were possible?

☐ Yes, at same job ☐ Yes, at a different job ☐ No

13. On your present co-op job, what are your housing arrangements?

☐ Dormitory or college housing ☐ Alone in a rented room or apartment

☐ Sharing a rented room or apartment ☐ Other; what type? _____

14. Did you have any co-op assignment that you liked or enjoyed well enough to consider as a regular full-time job after you complete your education? ☐ No ☐ Yes

Considering your best (or only, if this is your only one) co-op assignment, did you like:

	NO	YES
The way the supervisor treated you		
The attitude of your co-workers		
The type of work you were doing		
The organization's policies and its rules and regulations		
The salaries paid to employees		
The other (fringe) benefits for employees		
The geographic location		
The opportunities for advancement		
List any other aspects of the job that were important to you, and check whether you like(d) each:		

15. All other things being equal, after you complete all schooling what is your first-choice career? (Be as specific as possible.) _____

Check to indicate how likely you think it is that you will enter that career:

☐ Not very likely ☐ Somewhat likely ☐ Very likely

16. Twenty years from now, how likely do you think it is that you will be working full-time at your first-choice career?

☐ Not very likely ☐ Somewhat likely ☐ Very likely

Twenty years from now, how likely do you think it is that you will be working full-time at any career or job?

☐ Not very likely ☐ Somewhat likely ☐ Very likely

Part B: WHERE I AM HEADING AFTER COLLEGE

The following questions are designed to help college students assess their degree of progress toward making and carrying out decisions affecting their career. They are a way of finding out where a person is in his or her career planning, and what the person's present attitudes, feelings, needs, or concerns are. This kind of information will help you determine what kinds of help you may need in your career exploration and career planning activities.

Since this is the purpose, there are no right or wrong answers to the statements. All the statements refer to your present feelings. Circle A (Agree) or D (Disagree) for each statement, depending on whether or not it applies to you; that is, something you could or would say about yourself. Mark the statement "Agree" only if you feel this way right now. You may have felt this way in the past, or you could conceivably feel this way in the future, but if it is not a concern to you right now, mark it "Disagree."

For a statement to be true of you, it doesn't always have to be the case, but more often than not. If you really can't make up your mind, then leave the item blank--but try not to leave more than a few of them blank, or the scores will not be valid.

A D.... Almost any career seems appealing to me.

A D.... What I used to think I wanted to become doesn't seem practical any more.

A D.... I think I'll be happy with the career I have chosen.

A D.... I wonder what kind of job I'll be able to get in my field.

A D.... My plans for the future are too indefinite.

A D.... I'm trying to decide between two or three possible careers.

A D.... I'm pretty certain about the occupation I will enter.

A D.... My attitudes and outlook are becoming more like the people I know in my field.

A D.... I want to know what field of work I'm best suited for.

A D.... There are several careers which I have already decided against.

A D.... I'm a lot happier now that my future career is clear to me.

A D.... The occupation I have chosen will affect the kinds of friends I will have in the future.

A D.... I don't know what I really want out of life.

A D.... I've become more realistic in my thinking about possible careers.

A D.... I won't let anything get in the way to my reaching my goal.

A D.... I don't have enough experience for a job in my field.

A D.... I need information about occupations.

TURN TO OTHER SIDE

A D.... I've changed my mind about what I wanted to become, now that I've learned more about the field.

A D.... The more I learn about things in my field, the more involved I become.

A D.... I need to find out what jobs are available in my field.

A D.... I'm interested in too many fields.

A D.... I'm more certain of the fields I don't want than what I do want.

A D.... I've decided on the field I am going into.

A D.... I hope the people in my field will accept me.

A D.... I need to decide on an occupation.

A D.... I know what's important to me, but I don't know what kind of career would meet most of my needs.

A D.... The career I have chosen fits in with my personality.

A D.... I need to start thinking about job interviews.

A D.... It's hard to know what to look for in a career.

A D.... I need to know more about the training required for some of the occupations I am considering.

A D.... I feel I can overcome any obstacles in the way of my goal.

A D.... I will probably have to move away from here to get a job in my field.

A D.... I can't decide on a career because my interests keep changing.

A D.... I don't know if I have the right kind of personality for the work I'm considering.

A D.... It's unlikely that I will change my mind about my career plans.

A D.... The people in my field have certain expectations of me.

A D.... I don't know how to go about deciding on a career.

A D.... There are not many job opportunities in the field that I really like.

A D.... I'm looking forward to getting out of school and getting started in my career.

A D.... I think I'm ready to choose a specialty within my chosen field.

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Center for Advanced Study in Education/IRDOE
City University of New York
COOPERATIVE EDUCATION STUDENT SURVEY

79/80

This Survey asks for some background about you and your reactions to your co-op work experience in general, and for information specifically about your present co-op job. Try to answer all questions, whether this is your first co-op experience or whether you have worked as a co-op before. The first few questions concern your experiences up to now.

1. What is your approximate grade point average? ☐ A+ ☐ A ☐ B+ ☐ B ☐ C+ ☐ C ☐ Below C ☐ Ungraded ☐ Other; explain: _____

2. We'd like to know how many different companies (agencies, organizations) you have worked for as a co-op, and how many placements you spent at each one of them. In the boxes below, write the number of placements (assignments) you spent at each company. BE SURE TO INCLUDE YOUR PRESENT PLACEMENT. If, for example, this is your first co-op placement, write "1" in the box under "Co. A" and "0" in the other boxes. If you are now on your 5th placement and have worked at 5 different companies (that is, 1 placement at each), write a "1" in each box up through "Co. E" and "0" in the rest. If you are on your 5th placement but have worked at only one company, write "5" under "Co. A" and "0" in all the other boxes.

Different Companies:	Co. A	Co. B	Co. C	Co. D	Co. E	Co. F	Co. G	Co. H
Number of Placements at each co.								

Now add the numbers you have written in all the boxes to get the TOTAL NUMBER OF CO-OP WORK PLACEMENTS you've had, including the present one. Enter the total here: ☐

3. VIEWING YOUR CO-OP WORK ASSIGNMENT(S) AS A WHOLE, for each question below, circle a number to show your answer. Please use the scale at the right: →

1 = Little or not at all
2 = Somewhat
3 = Very much

How helpful is co-op in encouraging feelings of independence? 1 2 3
To what extent has your co-op work met your expectations? 1 2 3
How closely has your co-op work matched the work you wanted to try? 1 2 3
How much has it helped you clarify your future career plans?. 1 2 3
How much have you enjoyed your co-op work experience? 1 2 3
How relevant has your co-op work been to your major?. 1 2 3
How useful has it been in providing general work experience? 1 2 3
How useful has it been for improving general work skills? 1 2 3
How useful has co-op been for improving specific career skills? 1 2 3
How useful has it been for teaching you about a specific career? 1 2 3
How much has it taught you about your strengths & weaknesses? 1 2 3
How useful has it been in providing contacts for future employment? 1 2 3
How useful has it been in teaching you about the "real world"? 1 2 3
How useful is co-op for teaching you about how to work with others? 1 2 3
How useful is it for teaching you how to accept responsibility? 1 2 3
How useful is co-op in showing how education applies to work? 1 2 3
How helpful is co-op for financing your education? 1 2 3
How useful is it for testing/exploring your career choice? 1 2 3
How much has it taught you about aspects of work you really don't like? 1 2 3
How helpful is it for learning what kinds of jobs exist in your field? 1 2 3

4. Since you started co-op, how much of a problem has each of the items below been to you? (Check a box to show your answer to each item.)

	Major problem	Some problem	Little or no problem
Complying with college rules and regulations			
Maintaining good grades			
Paying my tuition and fees			
Paying for other expenses			
Making a definite choice of major			
Making a career choice			
Keeping up with hobbies and non-school interests			
Maintaining good relations with my family			
Having an adequate social life			
Maintaining friendships			

5. Below are listed some possible reasons why people choose a co-op program. First, rate each reason to show how important it was to you when you FIRST ELECTED a co-op program. Then, go through the items again and rate how important each is to you NOW. (Check a box to show your answers.)

	DEGREE OF IMPORTANCE					
	When FIRST ELECTING a co-op program			NOW		
	Not Very	Some-what	Very	Not Very	Some-what	Very
To earn money for tuition						
To earn extra expense money						
For valuable work experience						
To avoid studying full time without stop						
For valuable career information						
For better understanding of what I want to do						
To make important personal contacts						
To get a more well-rounded education						
Because people thought it would be good for me						
Because it would make my family happy						

6. Below is a list of reasons that may influence people's career choice. Using the following scale, circle a number to show how important each is to you in choosing a career:

1 = Of little or no importance to me now
2 = Somewhat important to me now
3 = Very important to me now

Offers:		Offers opportunities:	
1 2 3	High salary	1 2 3	To work with people
1 2 3	Pleasant surroundings	1 2 3	To work with ideas
1 2 3	Steady secure work	1 2 3	For advancement
1 2 3	Interesting, challenging work	1 2 3	To contribute to society
1 2 3	Freedom from supervision	1 2 3	To be creative
1 2 3	Sense of achievement/ accomplishment	1 2 3	To fully use my skills and abilities
1 2 3	High prestige/status	1 2 3	To help others
1 2 3	Enjoyable work	1 2 3	Other;specify:_____

7. After you complete all schooling, what is your first-choice career? Please be as specific as possible:

_____

How likely is it that you will enter this career? ☐ Not very ☐ Somewhat ☐ Very

How likely is it that you will be working full time at this career 20 years from now? ☐ Not very ☐ Somewhat ☐ Very

How likely is it that you will be working full time at any career 20 years from now? ☐ Not very ☐ Somewhat ☐ Very

THE QUESTIONS THAT FOLLOW ARE ABOUT YOUR PRESENT CO-OP JOB

These questions refer to the usual or typical conditions at your present co-op job, and to your whole day at work, from arrival to departure--so this includes work time and time spent socializing or taking meal or rest breaks during the day. (Check one box for each.)

1. How did you get your present co-op job? ☐ My college found it ☐ I found it myself ☐ Other; please explain: _____

2. Is your present co-op job: ☐ Full-time ☐ Part-time ☐ Other; explain: _____

3. At what time are you scheduled: To begin your work day? _____ AM/PM (Circle AM or PM)
   To end your work day? _____ AM/PM

4. Whatever time your work day officially starts, when do you usually arrive?
   - ☐ 15-30 minutes before starting time
   - ☐ 5-10 minutes before starting time
   - ☐ Just about on time
   - ☐ 5-10 minutes late
   - ☐ 15-30 minutes late
   - ☐ Other; explain: _____

5. Whatever time your work day officially ends, when do you usually leave for the day?
   - ☐ 15-30 minutes before the end
   - ☐ 5-10 minutes before the end
   - ☐ Just about on time
   - ☐ 5-10 minutes after
   - ☐ 15-30 minutes after
   - ☐ Other; explain: _____

6. If you get to work before your day officially starts, what do you usually do?
   - ☐ Have coffee, read the paper
   - ☐ Chat with other employees
   - ☐ Arrange my desk, papers, or tools
   - ☐ Finish leftover work from the day before
   - ☐ Start new work
   - ☐ Tidy myself up
   - ☐ Take care of personal business
   - ☐ Other; explain: _____

7. If you leave work after your day officially ends, what do you usually do between the official ending time and the time you leave?
   - ☐ Relax, read the paper
   - ☐ Arrange my desk, papers, or tools
   - ☐ Chat with other employees
   - ☐ Start on some new work
   - ☐ Finish work I've started
   - ☐ Tidy myself up
   - ☐ Take care of personal business
   - ☐ Other; explain: _____

8. Sometimes co-op students feel that in some ways they are treated differently from similar non-co-op workers. Circle "T" if you feel the statement is mostly true for you, and circle "F" if you feel it is mostly false for you.

   T F More work is expected of me than of similar non-co-op workers
   T F Higher-level work is expected of me
   T F Less instruction is given to me
   T F Fuller explanations about work tasks are given to me
   T F More effort is made to give me an overall orientation to the company's work
   T F A more personal interest is taken in me
   T F I receive more help with non-work problems

9. Below are some questions about general aspects of your present job. For each, circle a number to show your answer. Use the scale below:

1 = Little or none
2 = Some
3 = Fairly much

HOW MUCH DO YOU KNOW OR UNDERSTAND ABOUT:

1 2 3 The overall work that your company does?
1 2 3 The work your department/division does?
1 2 3 The work your supervisor does?
1 2 3 The work your non-co-op co-workers do?
1 2 3 How your work contributes to the company's overall aims?

HOW MUCH OF A PART DO PERSONALITIES PLAY:

1 2 3 In getting along with other workers?
1 2 3 In getting along with supervisors?
1 2 3 In getting promations or raises?
1 2 3 In getting respect for yourself?

HOW MUCH OF A PART DOES THE WAY AN EMPLOYEE DRESSES:

1 2 3 Affect the way <u>he</u> is perceived?
1 2 3 Affect the way <u>she</u> is perceived?

HOW MUCH DOES YOUR SUPERVISOR KNOW:

1 2 3 About the details of your job?
1 2 3 About the amount of work you do?
1 2 3 About how much help you need in relation to your work?

HOW MUCH OF YOUR USUAL DAY AT WORK IS:

1 2 3 Spent at your regular work station?
1 2 3 Spent away from your work station?
1 2 3 Spent receiving instructions?
1 2 3 Spent having your work reviewed or checked?
1 2 3 Spent waiting for instructions or machine time?
1 2 3 Spent doing personal things?
1 2 3 Spent doing school-related things?
1 2 3 Spent taking meal or rest breaks?
1 2 3 Spent getting lunch or coffee for co-workers?
1 2 3 Spent getting lunch or coffee for supervisors?

HOW MUCH INFORMATION DO YOU GET FROM YOUR CO-WORKERS ABOUT:

1 2 3 How to perform your work?
1 2 3 How to get along with others
1 2 3 When to take breaks?
1 2 3 Whom to ask for instructions
1 2 3 How to get supplies you need?
1 2 3 How to obtain special privileges or favors?

HOW MUCH OF A PART DO YOUR SKILLS AND QUALIFICATIONS PLAY:

1 2 3 In getting along with co-workers?
1 2 3 In getting along with supervisors?
1 2 3 In getting promotions or raises?
1 2 3 In getting respect for yourself?

HOW MUCH TIME DO YOU:

1 2 3 Spend working on tasks <u>jointly</u> with other people?
1 2 3 Spend working on tasks <u>by yourself</u>?

HOW MUCH TIME DO YOU SPEND AT WORK ON ACTIVITIES THAT YOU CONSIDER TO BE:

1 2 3 Boring or uninteresting?
1 2 3 Challenging?
1 2 3 Instructive?
1 2 3 Beyond your abilities?
1 2 3 Not appropriate to your sex?
1 2 3 At too low a level for your job?
1 2 3 Unpleasant
1 2 3 Potentially hazardous?
1 2 3 Worthwhile?

10. This page lists activities or tasks that workers may perform. GO THROUGH THE LIST TWICE.

HOW MUCH WORK TIME:

1 = None of my time
2 = Little of my time
3 = Some of my time
4 = Much of my time
5 = Almost all my time

First, using the scale at the left, circle a number between 1 and 5 to show how much of your work time is usually spent on each task. Please answer every item.

Second, using the scale at the right, for each item circle a number between 1 and 3 to show HOW WELL you feel you perform or could perform that task. Answer every item, whether or not you do it on your job.

HOW WELL:

1 = Not very well
2 = About average
3 = Very well

1	2	3	4	5	Fill out forms, keep records.	1	2	3
1	2	3	4	5	File, copy numbers, check.	1	2	3
1	2	3	4	5	Duplicate, Xerox.	1	2	3
1	2	3	4	5	Stamp things, staple, paste.	1	2	3
1	2	3	4	5	Proofread.	1	2	3
1	2	3	4	5	Lift or carry heavy or bulky things.	1	2	3
1	2	3	4	5	Lift or carry lighter things	1	2	3
1	2	3	4	5	Make security checks, guard	1	2	3
1	2	3	4	5	Shelve supplies, put things away.	1	2	3
1	2	3	4	5	Order supplies, take inventory.	1	2	3
1	2	3	4	5	Keypunch, verify.	1	2	3
1	2	3	4	5	Collect/ sort/ tabulate data or things.	1	2	3
1	2	3	4	5	Analyze sets of data.	1	2	3
1	2	3	4	5	Categorize data, things, or ideas.	1	2	3
1	2	3	4	5	Design instruments, techniques, procedures.	1	2	3
1	2	3	4	5	Type for work.	1	2	3
1	2	3	4	5	Operate a computer terminal/console	1	2	3
1	2	3	4	5	Do computer programming.	1	2	3
1	2	3	4	5	Operate equipment other than a typewriter or computer	1	2	3
1	2	3	4	5	Repair or maintain equipment.	1	2	3
1	2	3	4	5	Do errands for work, including delivering mail.	1	2	3
1	2	3	4	5	Answer phones, take messages.	1	2	3
1	2	3	4	5	Make routine phone calls for work.	1	2	3
1	2	3	4	5	Make important or unusual types of phone calls.	1	2	3
1	2	3	4	5	Handle or deal with animals or plants.	1	2	3
1	2	3	4	5	Read for work.	1	2	3
1	2	3	4	5	Attend meetings as an observer or note-taker.	1	2	3
1	2	3	4	5	Attend meetings as a participant.	1	2	3
1	2	3	4	5	Write form letters or other routine things.	1	2	3
1	2	3	4	5	Write up reports, summaries.	1	2	3
1	2	3	4	5	Instruct or tutor other people.	1	2	3
1	2	3	4	5	Deal with patients.	1	2	3
1	2	3	4	5	Deal with clients, customers, students.	1	2	3
1	2	3	4	5	Do art work, photography, graphics, design.	1	2	3
1	2	3	4	5	Other; specify: _____	1	2	3

11. Below are listed various people you may interact with during a work day--people in your department, in other departments, and from outside the company. GO THROUGH THE LIST TWICE.

HOW MUCH WORK TIME:

1 = None of my time
2 = Little of my time
3 = Some of my time
4 = Much of my time
5 = Almost all my time

First, for each item circle a number between 1 & 5 to show HOW MUCH WORK TIME you usually spend with each. Use the scale at the left.

Second, for each item circle a number between 1 & 3 to show HOW MUCH NON-WORK TIME you usually spend with each--at socializing, eating, talking, and so on. Use the scale at the right.

HOW MUCH NON-WORK TIME:

1 = None of my time
2 = Little of my time
3 = Some of my time

					WORKERS IN YOUR DEPARTMENT			
1	2	3	4	5	Your immediate supervisor	1	2	3
1	2	3	4	5	Workers at your supervisor's level of responsibility or higher.	1	2	3
1	2	3	4	5	Workers at a level between yours and your supervisor's	1	2	3
1	2	3	4	5	Workers at about your level of responsibility.	1	2	3
1	2	3	4	5	Workers at a lower level than yours, including ones you supervise	1	2	3
1	2	3	4	5	Other co-op students from your college.	1	2	3
1	2	3	4	5	Other co-op students from other colleges.	1	2	3
					WORKERS IN OTHER DEPARTMENTS			
1	2	3	4	5	Workers with more responsibility than you.	1	2	3
1	2	3	4	5	Workers at about your level of responsibility.	1	2	3
1	2	3	4	5	Workers with less responsibility than you have	1	2	3
1	2	3	4	5	Any other co-op students.	1	2	3
					PEOPLE NOT EMPLOYED AT THE COMPANY			
1	2	3	4	5	Sales people, technical representatives.	1	2	3
1	2	3	4	5	Clients, customers, students, patients.	1	2	3
1	2	3	4	5	Government, administrative, or other professionals.	1	2	3
1	2	3	4	5	Friends or family members.	1	2	3
1	2	3	4	5	Delivery or repair people.	1	2	3

THE QUESTIONS THAT FOLLOW ARE ALSO ABOUT YOUR PRESENT CO-OP JOB

1. Is your direct supervisor: ☐ Female ☐ Male

2. If you were free to choose, would you prefer:
   ☐ A female supervisor ☐ A male supervisor ☐ I really have no preference

3. How often is your work checked or reviewed?
   ☐ Seldom or never ☐ Now & then ☐ Fairly often ☐ Very often

4. How often are you given new assignments?
   ☐ Seldom or never ☐ Now & then ☐ Fairly often ☐ Very often

5. How often do you discuss your work--any aspect of it--with your supervisor?
   ☐ Seldom or never ☐ Now & then ☐ Fairly often ☐ Very often

6. How well do you comply with your employer's work rules and policies? In comparison with the average non-co-op worker, I comply:

☐ Less well ☐ About the same ☐ Better

7. If you did not comply with the work rules and policies, compared with the average non-co-op worker do you think you would get into:

☐ Less trouble ☐ About the same amount ☐ More trouble

8. When you speak to your supervisor, how do you usually address him/her? By:

☐ Last name with a title (Dr., Ms., Mr., Mrs., etc.)
☐ Last name without a title
☐ First name
☐ Nickname
☐ I avoid using any name
☐ Other; specify:_____

9. Below is a list of characteristics that may relate to performing well and getting along well at the type of job you presently have. For each item, circle a number to show how important you think the characteristic is at work. Use the following scale:

1 = Not Very Important
2 = Somewhat Important
3 = Very Important

AT THE TYPE OF JOB YOU PRESENTLY HAVE, HOW IMPORTANT IS:

1	2	3	Being accurate	1	2	3	Following instructions exactly
1	2	3	Being neat	1	2	3	Behaving like other workers
1	2	3	Intelligence	1	2	3	Appearing to be hard-working
1	2	3	Being ambitious	1	2	3	Taking problems in stride
1	2	3	Good judgment	1	2	3	Being independent
1	2	3	Adapting to circumstances	1	2	3	Being productive
1	2	3	Loyalty to the job	1	2	3	Being reliable
1	2	3	Being assertive	1	2	3	Being alert
1	2	3	Being able to make decisions	1	2	3	Doing work of high quality
1	2	3	Eagerness to learn new things	1	2	3	Showing initiative
1	2	3	Complying with rules and policies	1	2	3	Knowing when to ask for help
1	2	3	Getting along with the other workers	1	2	3	Knowing whom to ask for help
1	2	3	Being efficient	1	2	3	Tolerating other workers' views
1	2	3	Ability to work under pressure	1	2	3	Accepting criticism
1	2	3	Meeting deadlines	1	2	3	Not getting rattled
1	2	3	Willingness to admit mistakes	1	2	3	Taking responsibility
1	2	3	Doing necessary drudge work	1	2	3	Focusing mainly on work
1	2	3	Finishing tasks speedily	1	2	3	Behaving maturely
1	2	3	Self-confidence	1	2	3	Being friendly with co-workers
1	2	3	Trying to do better than other workers	1	2	3	Being friendly with supervisors
1	2	3	Complying with unwritten practices	1	2	3	Being a good sport
1	2	3	Anticipating things to do	1	2	3	Volunteering to do things
1	2	3	Keeping yourself busy	1	2	3	Being organized
1	2	3	Pitching in at work	1	2	3	Being a good team member
1	2	3	Communicating clearly	1	2	3	Getting to know people in other departments

THESE LAST FEW QUESTIONS ARE ABOUT HYPOTHETICAL WORK SITUATIONS

1. Assume that you have a co-op job as a typist, and it's half an hour before the end of your work day. Your supervisor, rushing to a meeting, gives you three letters to type, and departs. You estimate that it will take a half hour to do one letter and you don't know which is important. What should you do? (Check just one response.)

- ☐ Type any one of the three well
- ☐ Ask a co-worker which one is the most important, and do that one
- ☐ Stay late or come in early the next morning & finish all three
- ☐ Type fast drafts of all three
- ☐ Ask another supervisor or senior worker which one is most important, and do that one
- ☐ Other;specify:_____

2. Assume that you are working in a room with several other people whose jobs are similar to yours. You are doing a task that requires concentration and they are talking noisily. What should you do? (Check just one response.)

- ☐ Ask them to keep quiet
- ☐ Ask your supervisor for another place to work
- ☐ Find another place to work
- ☐ Do the best you can under these conditions
- ☐ Ask your supervisor to quiet them
- ☐ Ask your supervisor if you can take the work home and do it there
- ☐ Stay late or come in early to do the work when it's quiet
- ☐ Postpone doing it until later
- ☐ Other; specify:_____

3. Assume that your supervisor is away from the office on business, and that by midday you have finished your assigned work. What should you do? (Check just one response.)

- ☐ Review and check the work you have completed
- ☐ Ask a co-worker what to do
- ☐ Ask another supervisor what to do
- ☐ Quietly read a book about work
- ☐ Volunteer to help someone who is busy
- ☐ Decide by yourself what to do
- ☐ Call your supervisor
- ☐ Other; specify:_____

4. Assume that you have just been given a new task to do and your supervisor has explained how to do it. You start, and as you are working you figure out a more efficient procedure. What should you do? (Check just one response.)

- ☐ Do it your own way
- ☐ Check with co-workers about how they do it
- ☐ Discuss your way with your supervisor
- ☐ Do it your supervisor's way
- ☐ Other; specify:_____

5. Assume that the company you work for allows all employees one day of sick leave for each month they work. All of the people on the list below have worked for 6 months and are entitled to 6 days of sick leave. At the end of 6 months how many days of sick leave do you think each of the people would probably have taken? Circle a number to show the number of days sick leave taken by each.

The president of the company	1	2	3	4	5	6
The head of a division/department. .	1	2	3	4	5	6
A non-co-op co-worker of yours. . .	1	2	3	4	5	6
A co-op student.	1	2	3	4	5	6
A receptionist or secretary.	1	2	3	4	5	6
Yourself.	1	2	3	4	5	6

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE. PLEASE USE THE ENCLOSED ENVELOPE TO MAIL IT.

Center for Advanced Study in Education/IRDOE
City University of New York
79/80

COOPERATIVE EDUCATION STUDY: SUPERVISOR'S EVALUATION

Please indicate your sex: ☐ Female ☐ Male

Answer the questions that follow in relation to the student named in the letter.

1. Sometimes co-op students feel that in some ways they are treated differently from non-co-op workers in similar jobs. We are interested in your impressions. For each statement below, please circle "T" if, based on your experience, you feel it is generally true, and circle "F" if you feel it is generally false.

   T F More work is expected of co-ops than of similar non-co-op workers
   T F Higher-level work is expected of co-op workers
   T F Less instruction is given to co-op workers
   T F Fuller explanations about work tasks are given to co-op workers
   T F More effort is made to give co-ops an overall orientation to the company's work
   T F A more personal interest is taken in co-ops
   T F Co-ops receive more help than similar non-co-ops with non-work problems

2. How much do you feel the student knows, in comparison with non-co-ops doing similar types of work, about:

	Little or nothing	Some	Much
Your work			
The work done by his/her co-workers			
The work of your department/division			
The overall work of the organization			
How her/his work contributes to the organization's overall aims			

3. Below (and continued on the reverse side of the page) is a list of WORK TASKS and WORKER QUALITIES that describe workers in general. Consider the student in relation to other regular (i.e., not co-op) full-time employees in similar jobs. For each item on the list, rate HOW WELL the student performs or HOW MUCH of the quality he/she exhibits at work. Please use the following scale and circle one number for each item:

   1 = Below average
   2 = Average
   3 = Above average
   4 = Excellent

Use NA (not applicable) only if the student rarely or never performs a particular work task.

WORK TASKS:

1 2 3 4 NA Fill out forms, keep records
1 2 3 4 NA File, copy numbers, check
1 2 3 4 NA Duplicate, Xerox
1 2 3 4 NA Stamp things, staple, paste
1 2 3 4 NA Proofread
1 2 3 4 NA Lift or carry heavy or bulky things
1 2 3 4 NA Lift or carry lighter things

WORK TASKS:

1 2 3 4 NA Make security checks, guard
1 2 3 4 NA Shelve supplies, put things away
1 2 3 4 NA Order supplies, take inventory
1 2 3 4 NA Keypunch, verify
1 2 3 4 NA Collect/sort/tabulate data or things
1 2 3 4 NA Analyze sets of data

(Turn over)

WORK TASKS:

1 2 3 4 NA Categorize data, things, ideas
1 2 3 4 NA Design instruments, techniques, or procedures
1 2 3 4 NA Type for work
1 2 3 4 NA Operate a computer terminal/ console
1 2 3 4 NA Do computer programming
1 2 3 4 NA Operate equipment other than a typewriter or computer
1 2 3 4 NA Repair or maintain equipment
1 2 3 4 NA Do errands, including delivering mail
1 2 3 4 NA Answer phones, take messages
1 2 3 4 NA Make routine phone calls
1 2 3 4 NA Make important phone calls
1 2 3 4 NA Handle or deal with animals or plants
1 2 3 4 NA Read for work
1 2 3 4 NA Attend meetings as an observer or note-taker
1 2 3 4 NA Attend meetings as a participant
1 2 3 4 NA Write form letters or other routine things
1 2 3 4 NA Write up reports, summaries
1 2 3 4 NA Instruct or tutor people
1 2 3 4 NA Deal with patients
1 2 3 4 NA Deal with clients, students, customers
1 2 3 4 NA Do art work, photography, graphics, design
1 2 3 4 NA Suggest modifications in procedures
1 2 3 4 NA Make appropriate decisions
1 2 3 4 NA Work with others
1 2 3 4 NA Work alone

WORKER QUALITIES:

1 2 3 4 Being accurate
1 2 3 4 Being neat
1 2 3 4 Intelligence
1 2 3 4 Being ambitious
1 2 3 4 Good judgment
1 2 3 4 Adapting to circumstances
1 2 3 4 Loyalty to the job
1 2 3 4 Being assertive

WORKER QUALITIES:

1 2 3 4 Being able to make decisions
1 2 3 4 Eagerness to learn new things
1 2 3 4 Complying with rules & policies
1 2 3 4 Getting along with the other workers
1 2 3 4 Being efficient
1 2 3 4 Ability to work under pressure
1 2 3 4 Meeting deadlines
1 2 3 4 Willingness to admit mistakes
1 2 3 4 Doing necessary drudge work
1 2 3 4 Finishing tasks speedily
1 2 3 4 Self-confidence
1 2 3 4 Trying to do better than other workers
1 2 3 4 Complying with unwritten practices
1 2 3 4 Anticipating things to do
1 2 3 4 Keeping busy
1 2 3 4 Pitching in at work
1 2 3 4 Communicating clearly
1 2 3 4 Following instructions exactly
1 2 3 4 Behaving like other workers
1 2 3 4 Appearing to be hard-working
1 2 3 4 Taking problems in stride
1 2 3 4 Being independent
1 2 3 4 Being productive
1 2 3 4 Being reliable
1 2 3 4 Being alert
1 2 3 4 Doing work of high quality
1 2 3 4 Showing initiative
1 2 3 4 Knowing when to ask for help
1 2 3 4 Knowing whom to ask for help
1 2 3 4 Tolerating other workers' views
1 2 3 4 Accepting criticism
1 2 3 4 Not getting rattled
1 2 3 4 Taking responsibility
1 2 3 4 Focusing mainly on work
1 2 3 4 Behaving maturely
1 2 3 4 Being friendly with co-workers
1 2 3 4 Being friendly with supervisors
1 2 3 4 Being a good sport
1 2 3 4 Volunteering to do things
1 2 3 4 Being organized
1 2 3 4 Being a good team member
1 2 3 4 Getting to know people in other departments

APPENDIX C

SUPPLEMENTARY DATA
("New" Experience)

Page

TABLE C1 Selected Demographic Characteristics of "New" Experience Groups..... C1

TABLE C2 Mean Amount of Work Time Students in the "New" Experience Groups Usually Spend on Specified Work Tasks..... C2

TABLE C3 Supervisors' Mean Ratings of How Well Students in Each "New" Experience Group Perform the Listed Tasks..... C3

TABLE C4 Students' Mean Ratings of the Importance of Various Traits for Performing Well At Work..... C4

TABLE C5 Supervisors' Mean Ratings of the Amount of Work-Related Traits Students Exhibit, Compared With Non-Co-op Workers..... C6

TABLE C1

SELECTED DEMOGRAPHIC CHARACTERISTICS
OF "NEW" EXPERIENCE GROUPS

DEMOGRAPHIC VARIABLES	"New" Experienced Group	"New" Inexperienced Group
Ss Sex: % male	72	65
Sex of Supervisor: % male	86	77
No. of Co-op Placements:		
% One	--	100
% Two-6+	100	--
Current Placement: % Full-time	96	96

TABLE C2

MEAN AMOUNT OF WORK TIME STUDENTS IN THE "NEW" EXPERIENCE GROUPS USUALLY SPEND ON SPECIFIED WORK TASKS

TASKS	"New" Experienced Group	"New" Inexperienced Group
Fill out forms	2.9	3.0
File	2.5	2.7*
Duplicate	2.4	2.5*
Stamp	2.3	2.4
Proofread	2.4	2.6Δ
Lift-heavy	2.4	2.4
Lift-lighter	2.5	2.7Δ
Security checks	2.7	2.5
Shelve supplies	2.4	2.5
Order supplies	2.4	2.6Δ
Keypunch	2.8	3.0
Collect/sort	3.1	3.2
Analyze data	3.3	3.3
Categorize data	3.0	3.0
Design instruments	3.1	2.9
Type	2.6	2.6
Operate computer	3.5	3.4
Programming	3.4	3.3
Operate other equip.	3.3	3.1
Repair equipment	2.7	2.6
Do errands	2.3	2.6**
Answer phones	2.5	2.6
Routine phone calls	2.7	2.7
Important phone calls	2.7	2.8
Deal w/animals, plants	3.1	2.9
Read	2.9	2.8Δ
Observe meetings	2.5	2.5
Participate in meetings	2.6	2.7
Write form letters	2.6	2.8
Write reports	3.0	3.0
Instruct people	2.7	2.8
Deal w/patients	4.2	4.3
Deal w/clients	3.2	3.4Δ
Do art work	3.1	3.0

NOTE: For interpretation of significances, see Note Table 9.
SCALE: 2=Little of my time, 3=Some of my time, 4=Much of my time, 5=Almost all of my time

TABLE C3

SUPERVISORS' MEAN RATINGS OF HOW WELL STUDENTS IN EACH "NEW" EXPERIENCE GROUP PERFORM THE LISTED TASKS

WORK TASKS	"New" Experienced Group	"New" Inexperienced Group
Fill out forms	3.0	3.0
File	3.1	3.1
Duplicate	3.1	3.1
Stamp	3.2	3.0
Proofread	3.0	3.0
Lift-heavy	2.8	3.0
Lift-lighter	3.0	3.0
Security checks	3.1	2.9
Shelve supplies	2.9	3.1
Order supplies	2.9	3.0
Keypunch	3.2	2.8*
Collect/sort	3.2	3.2
Analyze data	3.2	3.0*
Categorize data	3.0	3.0
Design instruments	2.9	2.8
Type	2.7	2.7
Operate computer	3.2	2.9*
Programming	3.1	2.7*
Operate other equipment	3.0	3.0
Repair	2.8	2.7
Do errands	3.1	3.2
Answer phones	3.0	3.0
Routine phone calls	2.9	3.1 $^{\Delta}$
Important phone calls	2.9	3.1
Deal with animals, plants	2.5	3.0
Read	3.0	3.1
Observe meetings	2.8	2.9
Participate in meetings	2.8	2.8
Write form letters	2.7	3.0*
Write reports	2.9	3.0
Instruct people	2.9	3.0
Deal with patients	3.1	3.1
Deal with clients	3.1	3.2
Do art work	3.0	3.1
Suggest modifications	2.8	2.8
Make decisions	2.9	3.0
Work with others	3.4	3.4
Work alone	3.3	3.3

NOTE: For interpretation of significances, see Note Table 9.
SCALE: 1=Below Average, 2=Average, 3=Above Average, 4=Excellent

TABLE C4

STUDENTS' MEAN RATINGS OF THE IMPORTANCE
OF VARIOUS TRAITS FOR PERFORMING WELL AT WORK

WORK-RELATED TRAITS	"New" Experienced Group	"New" Inexperienced Group
Accurate	2.9	2.9
Neat	2.4	2.5
Intelligence	2.7	2.6
Ambitious	2.5	2.4
Good judgment	2.8	2.8
Adapt to circumstances	2.7	2.7
Loyalty to job	2.3	2.3
Assertive	2.4	2.3
Able to make decisions	2.7	2.6
Eager to learn new things	2.6	2.7
Comply with rules	2.3	2.4 Δ
Get along w/other wkrs.	2.6	2.6 Δ
Efficient	2.7	2.7 Δ
Able to work under pres.	2.5	2.5
Meeting deadlines	2.5	2.4
Willing to admit mistakes	2.4	2.5
Do necessary drudge work	2.4	2.4
Finish tasks speedily	2.3	2.3
Self-confidence	2.7	2.6 Δ
Try to do better than others	1.8	1.7 Δ
Comply with unwritten practices	2.0	2.0
Anticipate things to do	2.3	2.3
Keep busy	2.3	2.3
Pitch in	2.4	2.4
Communicate clearly	2.8	2.8
Follow instructions exactly	2.5	2.5
Behave like others	1.9	1.8 Δ
Appear hard-working	2.0	2.1
Take problems in stride	2.6	2.6
Be independent	2.4	2.4
Be productive	2.7	2.7
Be reliable	2.8	2.9*
Be alert	2.7	2.8
Do work of high quality	2.8	2.7
Show initiative	2.7	2.6

(continued)

TABLE C4
(continued)

STUDENTS' MEAN RATINGS OF THE IMPORTANCE
OF VARIOUS TRAITS FOR PERFORMING WELL AT WORK

WORK-RELATED TRAITS	"New" Experienced Group	"New" Inexperienced Group
Know when to ask help	2.7	2.7
Know whom to ask help	2.6	2.6
Tolerate other's views	2.3	2.3
Accept criticism	2.6	2.5
Not get rattled	2.5	2.5
Take responsibility	2.7	2.7
Focus mainly on work	2.4	2.4
Behave maturely	2.6	2.6
Be friendly with coworkers	2.6	2.6
Be friendly with supervisors	2.5	2.5
Be a good sport	2.3	2.4
Volunteer to do things	2.1	2.2
Be organized	2.6	2.6
Be a good team member	2.5	2.4
Get to know people in other departments	2.0	2.1

NOTE: For interpretation of significances, see Note Table 9.
SCALE: 1=Not Very Important, 2=Somewhat Important, 3=Very Important

TABLE C5

SUPERVISORS' MEAN RATINGS OF THE AMOUNT OF WORK-RELATED TRAITS STUDENTS EXHIBIT, COMPARED WITH NON-CO-OP WORKERS

WORK-RELATED TRAITS	"New" Experienced Group	"New" Inexperienced Group
Accurate	3.2	3.2
Neat	3.1	3.2
Intelligence	3.4	3.4
Ambitious	3.3	3.3
Good Judgment	3.2	3.1
Adapt to circumstances	3.2	3.2
Loyalty to job	3.2	3.2
Assertive	2.9	2.9
Able to make decisions	3.0	3.0
Eager to learn new things	3.5	3.5
Comply with rules	3.2	3.3
Get along with other workers	3.4	3.5
Efficient	3.1	3.3*
Able to work under pressure	3.1	3.0
Meeting deadlines	3.1	3.1
Willing to admit mistakes	3.0	3.1
Do necessary drudge work	3.1	3.2
Finish tasks speedily	3.1	3.2
Self-confidence	3.0	3.1
Try to do better than others	2.8	2.9
Comply with unwritten practices	2.9	3.0
Anticipate things to do	2.9	2.9
Keep busy	3.0	3.1
Pitch in	3.2	3.3
Communicate clearly	3.0	3.1
Follow instructions exactly	3.0	3.1
Behave like others	2.9	3.0
Appear hard-working	3.1	3.1
Take problems in stride	3.0	3.1
Be independent	3.1	3.0
Be productive	3.3	3.3

(continued)

TABLE C5
(continued)

SUPERVISORS' MEAN RATINGS OF THE AMOUNT OF
WORK-RELATED TRAITS STUDENTS EXHIBIT, COMPARED
WITH NON-CO-OP WORKERS

WORK-RELATED TRAITS	"New" Experienced Group	"New" Inexperienced Group
Be reliable	3.4	3.4
Be alert	3.3	3.3
Do work of high quality	3.2	3.2
Show initiative	3.2	3.2
Know when to ask help	3.1	3.2
Know whom to ask help	3.1	3.2
Tolerate other's views	3.0	3.1 Δ
Accept criticism	3.1	3.2
Not get rattled	3.0	3.0
Take responsibility	3.1	3.2
Focus mainly on work	3.0	3.1
Behave maturely	3.1	3.2
Be friendly with coworkers	3.4	3.4
Be friendly with supervisors	3.3	3.3
Be a good sport	3.2	3.2
Volunteer to do things	3.1	3.2
Be organized	3.0	3.2
Be a good team member	3.3	3.2
Get to know people in other departments	2.9	2.8

NOTE: For interpretation of significances, see Note Table 9.
SCALE: 1=Below Average, 2=Average, 3=Above Average, 4=Excellent